

2-27-2015

"Probing the Transition State Region in Catalytic CO Oxidation on Ru" data files

H. Öström
Stockholm University

H. Öberg
Stockholm University

H. Xin
SLAC National Accelerator Laboratory

Jerry L. LaRue
Chapman University, larue@chapman.edu

M. Beye
SLAC National Accelerator Laboratory

See next page for additional authors

Follow this and additional works at: http://digitalcommons.chapman.edu/sees_data

 Part of the [Biological and Chemical Physics Commons](#), [Other Chemistry Commons](#), and the [Physical Chemistry Commons](#)

Recommended Citation

H. Öström, H. Öberg, H. Xin, J. LaRue, M. Beye, M. Dell'Angela, J. Gladh, M. L. Ng, J. A. Sellberg, S. Kaya, F. Sorgenfrei, G. Mercurio, D. Nordlund, W. F. Schlotter, A. Föhlich, M. Wolf, W. Wurth, M. Persson, J. K. Nørskov, F. Abild-Pedersen, H. Ogasawara, L. G. M. Pettersson, A. Nilsson, Probing the Transition State Region in Catalytic CO Oxidation on Ru, *Science* 2015, 347, 978-982, DOI: 10.1126/science.1261747

This Book is brought to you for free and open access by the Biology, Chemistry, and Environmental Sciences at Chapman University Digital Commons. It has been accepted for inclusion in Biology, Chemistry, and Environmental Sciences Faculty Data Sets by an authorized administrator of Chapman University Digital Commons. For more information, please contact laughtin@chapman.edu.

Authors

H. Öström, H. Öberg, H. Xin, Jerry L. LaRue, M. Beye, M. Dell'Angela, J. Gladh, M. L. Ng, J. A. Sellberg, S. Kaya, G. Mercurio, D. Nordlund, W. F. Schlotter, A. Föhlisch, M. Wolf, W. Wurth, M. Persson, J. K. Nørskov, F. Abild-Pedersen, H. Ogasawara, L. G. M. Pettersson, and A. Nilsson



Supplementary Materials for

Probing the transition state region in catalytic CO oxidation on Ru

H. Öström, H. Öberg, H. Xin, J. LaRue, M. Beye, M. Dell'Angela, J. Gladh, M. L. Ng, J. A. Sellberg, S. Kaya, G. Mercurio, D. Nordlund, M. Hantschmann, F. Hieke, D. Kühn, W. F. Schlotter, G. L. Dakovski, J. J. Turner, M. P. Minitti, A. Mitra, S. P. Moeller, A. Föhlisch, M. Wolf, W. Wurth, M. Persson, J. K. Nørskov, F. Abild-Pedersen, H. Ogasawara, L. G. M Pettersson, A. Nilsson*

*Corresponding author. E-mail: nilsson@slac.stanford.edu

Published 12 February 2015 on *Science Express*
DOI: 10.1126/science.1261747

This PDF file includes:

Materials and Methods
Figs. S1 to S7
Table S1
References
Data: Coordinates for DFT optimized structures
Data: Computed MEP
Data: Free-energy (eV) profiles from Figure 2A
Data: Experimental XA spectra from Figure 1
Data: Computed XA spectra from Figure 2

Materials and methods

Sample preparation

The clean Ru(0001) sample was prepared through cycles of 5 minutes of Ne ion sputtering followed by flashing the surface to ~ 1400 K under ultrahigh vacuum conditions. The (2O + CO)/Ru(0001) surface was initially prepared by exposing the clean Ru(0001) surface to an O₂ background pressure of 3×10^{-8} Torr at a temperature of 800 K. The surface was allowed to cool and at ~ 300 K, a CO background pressure of 2×10^{-8} Torr was introduced into the chamber. These conditions result in the (2O+CO)/Ru(0001) honeycomb surface structure, as shown in Figure S1 (31). During experimental running conditions, the surface was further cooled using liquid nitrogen down to ~ 100 K while the background pressures of both CO and O remained constant at the pressures specified above. At 100 K, additional CO adsorbs onto the Ru surface.

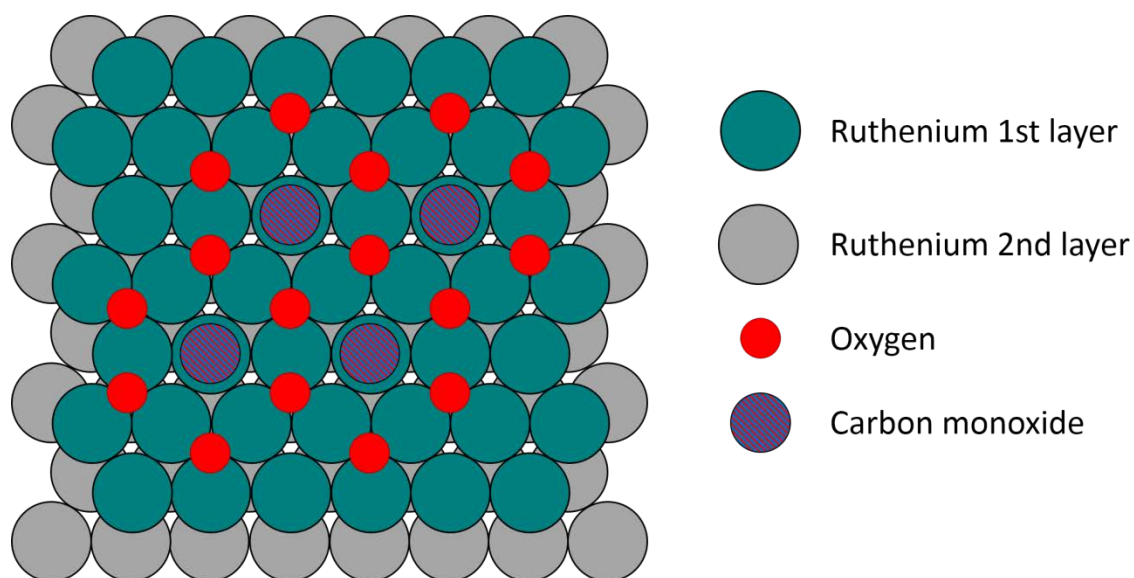


Figure S1 The (2O + CO) / Ru(0001) honeycomb structure. The O atoms occupy both fcc and hcp hollow sites. The CO molecules, each surrounded by six O atoms, adsorb at on-top sites.

Pump-probe setup

Optical pump, x-ray probe experiments were performed using the SSE endstation (17) at the soft x-ray (SXR) beam line (18) of the Linac Coherent Light Source (LCLS). The details of the methods and pump-probe setup are described in the supplementary online materials of ref. (19).

X-ray absorption spectra (XAS) were recorded in partial fluorescence yield mode. We monitored the O K α emission as a function of the photon energy using a grating spectrometer (17). The photon energy was continuously scanned near the O K-edge absorption edge of 528.7-542.0 eV with coupled beamline monochromator energy and FEL electron energy scans. The x-ray pulses generated by the LCLS had a pulse length of less than 80 fs and were monochromatized using a 100 line/mm grating at an exit slit of 115 μm providing a resolving power of $E/\Delta E=2000$ and a photon flux onto the sample of $1.3 \times$

10^{10} photons/pulse (19). The incidence angle of the x-ray beam was around 2 degrees.

Optical laser pulses at a wavelength of 400 nm and pulse length below 170 fs were used to drive the reaction. The pulse energy of the 400 nm laser was set to give a laser fluence below, but close to, the damage threshold of the Ru(0001) surface and the absorbed fluence was estimated to be around 140 J/m^2 ($1/e^2$). The 400 nm optical laser and x-ray laser were collinear with respect to each other and at 2° grazing incidence with respect to the sample surface.

To ensure that the x-ray beam was entirely overlapped by the 400 nm laser beam, the x-ray beam was focused to $50 \text{ }\mu\text{m}$ at the position of the sample, whereas the 400 nm laser beam was set to a focus of $65 \text{ }\mu\text{m}$ (FWHM). The x-ray laser was operated at 30 Hz, while the 400 nm laser was operated at 10 Hz to provide unpumped reference spectra between each pumped laser shot. The sample was scanned at a speed of 0.8 mm/s during experiments, separating the laser spots on the sample by $80 \text{ }\mu\text{m}$, so that the laser continuously excited fresh spots on the sample. The time elapsed between consecutive 400 nm shots on any given spot on the sample was ~ 15 seconds. This was enough time for O and CO to re-adsorb back onto the surface from the background pressures of O and CO.

The time-resolution of the pump-probe experiment is dependent on the inherent pulse width of the optical and free-electron laser pulses and the relative timing between these. Temporal overlap was determined using optical reflectivity of a Si_3N_4 sample(19, 32). The relative timing between the pulses was monitored for each shot using a non-destructive optical x-ray cross-correlator (33) and corrected for during data analysis. Based on the respective pulse lengths we estimate a time-resolution of 190 fs.

Computational details

The density functional theory (DFT) calculations were performed using the GPAW code (34, 35), which is a real-space, grid-based program. The exchange and correlation effects were approximated with the RPBE functional (36), a (4,4,1) k-point mesh was employed to integrate the Brillouin zone and a Fermi smearing of 0.1 eV was used to facilitate convergence. The default grid-spacing of 0.2 \AA was used. A model with four-layer slabs separated by at least 14 \AA of vacuum was used to represent the Ru(0001) surface. During structure relaxation, the bottom two layers were kept fixed while all other degrees of freedom were allowed to fully relax.

The first part of the Minimum Energy Path (MEP, Fig. S2), between IS and TS2, was determined using the nudged elastic band climbing image (NEB-CI) method (37) as implemented in GPAW. Initially, six intermediate images were employed in the method after which segments of the generated path were selected and more images were added to ensure localization of the true transition state. In total, the MEP from IS to IMS contains 22 intermediate images. In addition, the vibrational frequencies of TS1 generated with NEB were calculated to verify that the obtained configuration contained only one imaginary frequency. The second part of the MEP, the CO_2 desorption from IMS to FS, was calculated using constrained optimization, where the C-Ru distance was kept fixed upon stepwise displacing the CO_2 molecule out from the surface along the surface normal. Around the curvature surrounding TS2 a reduced step size of 0.01 \AA was employed to estimate the TS geometry accurately. Note, however, that this approach may lead to a slight overestimation of the barrier since the force minimization in each constrained optimization yields a local

minimum so that the estimated TS2 is not necessarily the true saddle point on the PES but rather a local minimum in its vicinity.

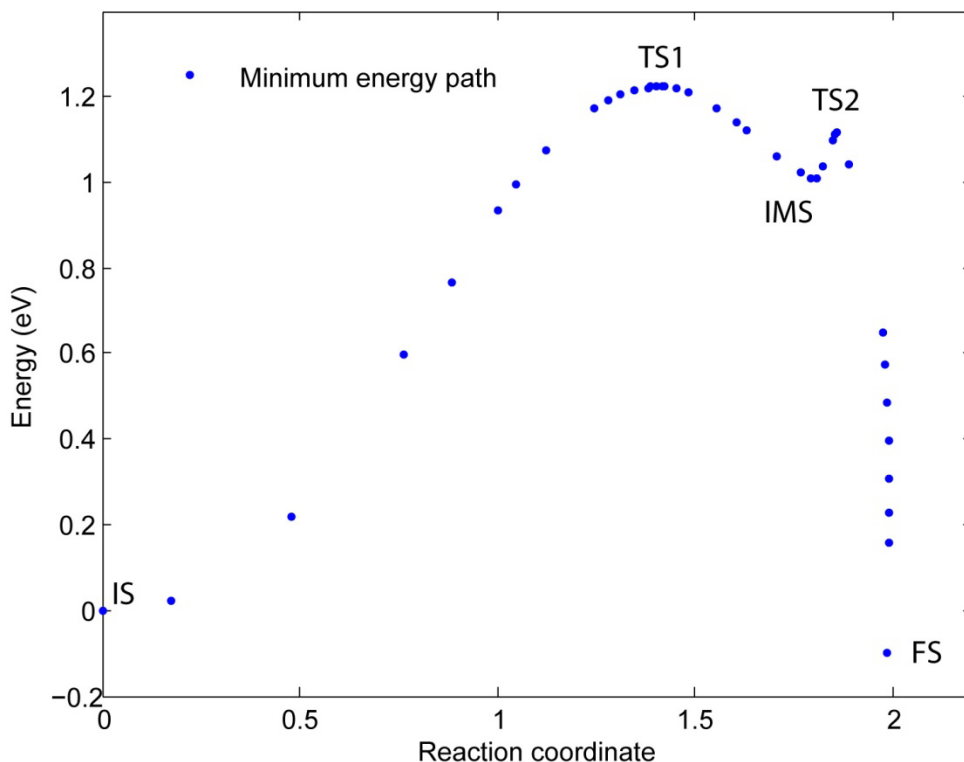


Figure S2. Minimum energy path of CO oxidation on Ru(0001), from initial state (IS), in which CO and O are coadsorbed in the honeycomb phase of O. The reaction mediates over transition state 1 (TS1) leading to the formation of an intermediate state (IMS) of adsorbed CO₂ which is adsorbed with a small barrier (0.12 eV passing TS2) against gas phase (FS).

2x2 cells were employed in the NEB calculations, but enlarged to 4x4 in the XAS calculations to avoid interactions between core-holes. The XAS calculations were carried out within the transition potential method (24), as implemented in GPAW (38). The parameters used for the spectrum calculations were the same as in (39). To indicate the reliability of these spectrum calculations Figure S3 shows a direct comparison between the experimental and computed spectra of adsorbed CO and O as pure adsorbate phases on Ru(0001) for which the structure is well known. Note that the adsorbed O phase has some minor impurities of CO contributing to the experimental spectrum.

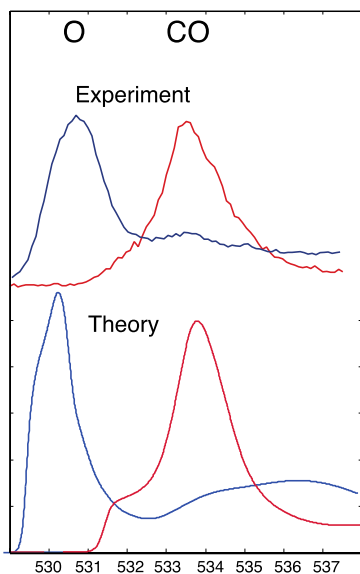


Figure S3. Experimental (top) and computed (bottom) XA spectra of CO on Ru(0001) and O on Ru(0001) showing excellent agreement. The intensity between 533-534 eV in the experimental spectrum of O on Ru(0001) is due to some minor CO contribution.

Note on the Intermediate State (IMS)

We note that although the IMS is deep enough to support one vibrational level (Figure 3B) there is no indication from the experimental XA spectra that this is populated. The correlation between bond length and position of the shape-resonance (Figure 2D) shows that populating the IMS would lead to significant intensity at 540 eV and higher (Figure 2C) while the experimental data (Figure 1A) do not show enhanced intensity in this region.

Free-energy Calculations (Figure 2A) and 1-D Model (Figure 3B)

The free energy of surface species along the MEP from the NEB-CI method were calculated based on frequencies in a harmonic oscillator approximation using the Thermochemistry python package available in the Atomic Simulation Environment (<https://wiki.fysik.dtu.dk/ase/ase/thermochemistry/thermochemistry.html>). In this approach, the degrees of freedom of the reacting adsorbates are assumed to be represented by localized oscillators with only vibrational modes. The vibrational mode that corresponds to the reaction coordinate, *i.e.* the one with a frustrated CO rotation and O translation (shown in Fig. S4), was excluded in the free energy profile calculation.

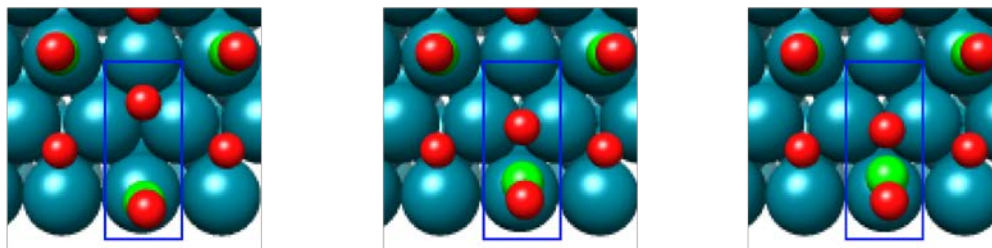


Figure S4. Illustration of the vibrational mode excluded from the free energy profile calculation.

The probability for forming O-CO near-TS complexes on Ru(0001) was estimated using a simple quantum model. Considering the honeycomb geometry at the surface with six oxygen atoms providing a cage for the central CO molecule we consider in Figure 3B a one-dimensional model surface to represent the MEP of attempts to react where a failed attempt leads to reflection towards another oxygen atom; this is modeled through the MEP of CO reacting mainly with fcc O atoms since hcp O atoms are less reactive (0.3 eV higher barrier). The wave functions of different states and corresponding probability density of O-CO species along the reaction coordinate were obtained by solving the nuclear Schrödinger equation numerically with the given potential using the O+CO reduced mass. Beyond TS2 the potential was taken as constant out to 2.1 Å where it goes to infinity to ensure that the particle has zero probability of being outside of the reaction coordinate and also allow a qualitative illustration of quantum states above the barrier.

The overall probability of finding O-CO near-TS complexes was then calculated for the three equivalent fcc O atoms by integrating from the inflection point of the MEP up to 2 Å along the reaction coordinate and thermally averaging at the relevant temperatures. To account for the contributions of hcp O atoms, we integrated the probability distribution from the inflection point (0.15 eV higher than that of fcc O atoms) up to the saddle point of TS1. The probability contribution from hcp O atoms is ~1-2% at 1500–3300 K adsorbate temperature.

We furthermore considered a path between two oxygen atoms towards the neighboring hexagon through a model with two units of the honeycomb structure where one CO moves and the other is fixed. We found that CO, initially in the bridge position on the path towards the on-top position between two oxygen atoms, is pushed back to the central on-top position while, if it is initially on-top between two oxygens, it reacts to form CO₂. Thus, although clearly a simplification of the multidimensional potential energy surface, we consider the 1D model sufficiently realistic to illustrate and analyze the reaction and experimental observations.

Two-Temperature Model

The two-temperature model uses heat equations to describe the energy transfer from the femtosecond laser pulse into the electron and phonon systems that are treated as coupled

heat baths (40):

$$C_{el} \frac{\partial}{\partial t} T_{el} = \frac{\partial}{\partial z} \left(k \frac{\partial}{\partial z} T_{el} \right) - g(T_{el} - T_{ph}) + S(z, t)$$

$$C_{ph} \frac{\partial}{\partial t} T_{ph} = g(T_{el} - T_{ph})$$

The electron-phonon coupling constant is given by g and the energy deposited by the laser pulse near the surface is described by $S(z, t) = I(t)\lambda^{-1}e^{-z/\lambda}$, where λ is the photon penetration depth. $I(t)$ is the temporal evolution of the source intensity that is written as a Gaussian distribution with pulse duration $\sigma = \Gamma/2.355$ where Γ is the full width at half maximum of the Gaussian distribution $I(t) = F \exp\left(\frac{-t^2}{2\sigma^2}\right) / \sqrt{2\pi\sigma^2}$. F is the absorbed fluence of the energy source. The hot electrons dissipate their energy by electron-phonon coupling and heat conduction into the bulk. The thermal conductivity that governs the energy dissipation into the bulk is defined as $k = k_0 T_{el}/T_{ph}$ where T_{el} and T_{ph} are the electron and phonon temperatures, respectively, and k_0 the thermal conductivity at the equilibrated base temperature before excitation. The photo-absorption of photons in the substrate generates a collection of hot electrons. The heat capacity of the electron bath is given by $C_{el} = \gamma T_{el}$ (γ is the electron specific heat). The heat capacity C_{ph} of the phonon heat bath can be calculated using the Debye model where $C_{ph} = 9nk_B \left(\frac{T_{ph}}{\Theta_D}\right)^3 \int_0^{\Theta_D/T_{ph}} dx \frac{x^4 e^x}{(e^x - 1)^2}$. The atom density is given by n and Θ_D is the Debye temperature of the metal. All the parameters used in the two-temperature model for Ru are tabulated in Table S1.

Table S1: Parameters of Two-Temperature Model for Ru

Electron specific heat γ	400	Jm ⁻³ K ⁻²
Electron heat conductivity k_0	117	Wm ⁻¹ K ⁻¹
Electron-Phonon coupling constant g	1.85·10 ¹⁸	Wm ⁻³ K ⁻¹
Debye temperature Θ_D	600	K
Atom density n	7.4·10 ²⁸	m ⁻³
Optical penetration depth λ (400 nm)	6.9·10 ⁻⁹	m
Pulse fluence F	140	J/m ²
Pulse duration Γ	170	fs
Initial temperature	100	K

Note on the two-temperature model

The two-temperature model was investigated experimentally in reference (23) of the main manuscript and found there to significantly overestimate the resulting temperatures. However, the data in reference (23) were recorded in a fluence regime up to 5.8 J/m² which is more than a factor 20 lower than the fluence used in the present work. The discrepancy between the experiment and the two-temperature model in that reference was caused by efficient energy dissipation into the bulk via ballistic electrons. As noted in the reference, the role of ballistic electrons is expected to decrease with increasing fluence. We thus expect that the two-temperature model provides a much better description of the sample

temperature in the present work than was found in the low-fluence experiments in reference (23).

Theoretical modeling of laser-induced O-Ru bond activation

To understand the role of the non-adiabatic coupling of femtosecond, laser-induced hot electrons (and holes) to the reaction coordinate for the activation of the CO oxidation, we used an electronic friction model (41). The model has been applied successfully to describe laser-induced, hot electron reaction dynamics (42-44). In particular, the electronic friction of the reactants around their equilibrium positions was found to play a key role for the reaction dynamics (45). We assume here that the activation involves the lateral and perpendicular vibrational modes of the adsorbed O atom. In the electronic friction model, the hot electron distribution is described by the above two-temperature model (40) with a temperature profile $T_{el}(t)$. The energy gain of a vibrational mode q through the electronic non-adiabatic coupling to the hot electron distribution is then given by a Boltzmann distribution with a temperature $T_q(t)$ satisfying,

$$\frac{dT_q}{dt}(t) = \frac{1}{\tau_{el}}(T_{el}(t) - T_q(t)),$$

where τ_{el} is the vibrational relaxation time due to electronic friction. In our case, the calculated $T_{el}(t)$, shown in Fig. 3A exhibits a rapid increase to a maximum temperature of about 5600 K after 100 fs followed by an equilibration with the phonon bath on a time scale set by the electron-phonon coupling relaxation time, $\tau_{el-ph} \sim 2$ ps (12). From DFT calculations using the electron-phonon coupling module in QUANTUM ESPRESSO (46), we obtain values 2 and 0.4 ps for τ_{el} of the lateral and perpendicular (with respect to the surface) O-Ru modes, respectively. The resulting $T_q(t)$ using these values for τ_{el} are also shown in Fig. 3A. The value for τ_{el} of the perpendicular mode is much smaller than τ_{el-ph} and $T_q(t)$ for this mode reaches a maximum value of 3300 K at 0.5 ps, which decays to 1500 K after 3 ps. In contrast, the value for τ_{el} of the lateral mode is similar in magnitude to τ_{el-ph} and $T_q(t)$ of the lateral mode increases monotonically to about 1500 K in 2 ps. A single adsorbate temperature for all vibrational modes cannot be expected on this short time-scale where there is not enough time for the vibrational modes to equilibrate. It is still, possible, however, to compare the obtained temperatures for the different vibrational modes to what would be required *in the reaction coordinate* to explain the experimental results. We find that an adsorbate vibrational temperature of 3300 K in the reaction coordinate would explain the experimental finding of ~ 10 % population in the transition state region. Our model shows that this temperature is likely to be obtained in the perpendicular O-Ru mode. However, since the reaction coordinate is expected to be mixed between the perpendicular and lateral O-Ru vibration modes a contribution also from non-thermalized electrons (11) or direct excitation by the optical field (8) may be required to

explain the experimental results. This would be consistent with CO oxidation on Pt(111) where Her *et al.* (11) attributed a wavelength-dependent yield to non-adiabatic coupling of the adsorbate motion to a non-thermalized electron distribution through excitations into vacant adsorbate states. Note that the calculated τ_{el} for the lateral mode is sufficiently long for energy transfer through this mechanism to survive in this coordinate in the time interval 1.5 to 3 ps.

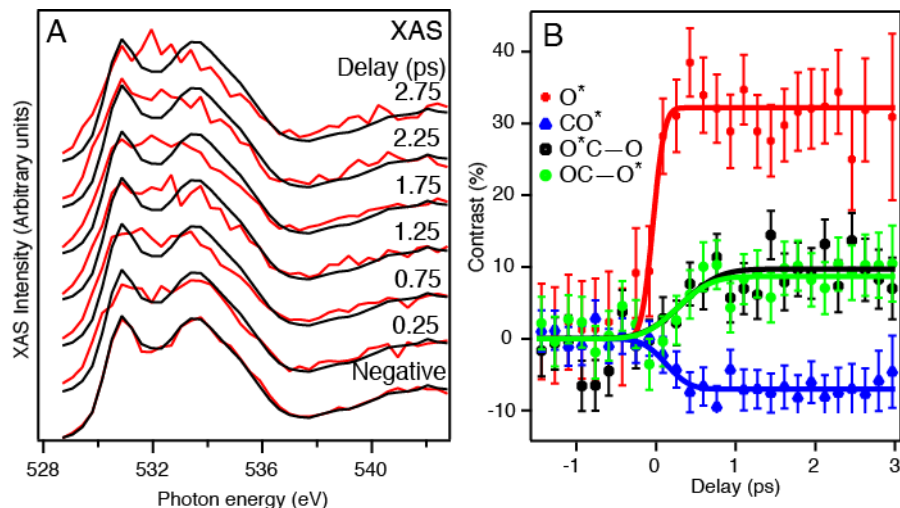


Figure S5. (A) O K-edge XA spectrum time-development after the pump (red). Each spectrum was averaged over 0.5 ps centered on the given time in order to reduce the noise level. The unpumped spectrum (black) is shown as reference. (B) Time-dependence of the spectral contrasts in the same four regions as in Figure 1B.

Quantification of transient spectral changes

Figure S5A shows the XAS at different pump-probe delays, recorded both in the 23 ps before the pump hit the sample and in 0.5 ps bins after the pump. Data recorded with the optical laser pump blocked are shown for reference. Note the very fast transient increase in intensity in the spectral region around 529 eV, on the low energy side of the O^* resonance and the slower transient response in the other spectral regions. The normalized time-resolved pump-probe differential signal plots in Figure S5B indicate transient spectral contrast between pumped and unpumped experimental data. The data are the same as in Figure 1B where a shorter time-interval is shown and where the contrasts were scaled to common asymptotes. We define the contrast as the difference in intensity between spectra with the pump laser present (I_{pumped}) and the unpumped spectra (I_{unpumped}), normalized to the sum of these intensities, *i.e.* $\text{contrast} = (I_{\text{pumped}} - I_{\text{unpumped}}) / (I_{\text{pumped}} + I_{\text{unpumped}})$. The four different spectral fingerprint regions for which the contrast were plotted, were chosen based on the spectrally resolved contrast shown in Figure S6. The changes of the contrast as a function of time t were fitted to a function proportional to $\int_{-\infty}^t e^{-\frac{(t-t_0)^2}{\sigma^2}} dt$ where t_0 denotes time zero. The width σ of this was reported as the characteristic time-scale of the transient changes in Figure 1B. Time zero for the experiment was defined as the inflection

point of the curve (Figure 1B) of spectral changes due to atomic oxygen; these correspond to activation of this species and rise to the maximum value within the time-resolution of the experiment. All other transients were set to have roughly the same onset as that of atomic oxygen by shifting the respective inflection point later in time. The shift was taken as the difference in width (σ) between the respective transient and that for the oxygen where the latter is assumed to be limited by time-resolution.

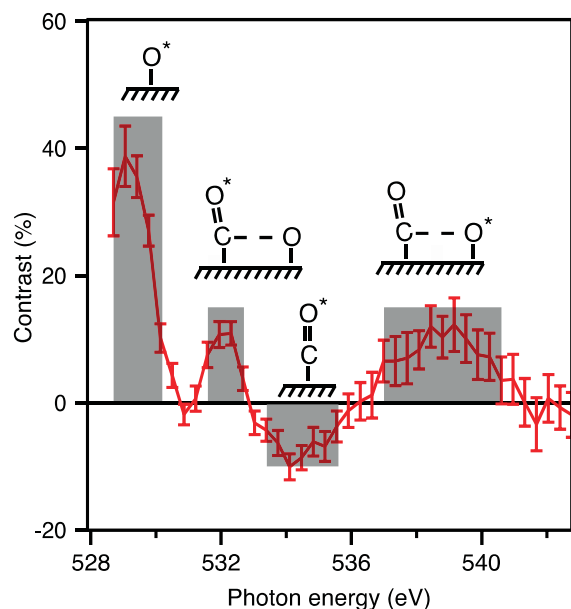


Figure S6. Spectrally resolved contrast between the pumped and unpumped x-ray absorption spectra averaged over the same 1.5 to 3 ps time interval after the pump as in Fig. 1A.

Long timescale decay

Figure S7A shows the temporal development of the pump-probe XAS spectra up to delay times of 100 ps. We estimate the life-time of the activated species that, through repeated attempts to cross the barrier, give rise to the new state appearing in the region around 532 eV between the O and CO resonances. In Figure S7B we plot the contrast between pumped and unpumped experimental data in the energy region below 531 eV. In the first few picoseconds we observe a fast decay of the contrast that then flattens out to follow the expected thermal evolution of the system that is expected to decay with a time-constant around 20 ps in this time-interval (44). The shorter life-time of the initial contrast reflects the decay of the initially highly activated oxygen atoms and is consistent with the typical life-time of a few picoseconds of adsorbate excited vibrational states at metal surfaces.

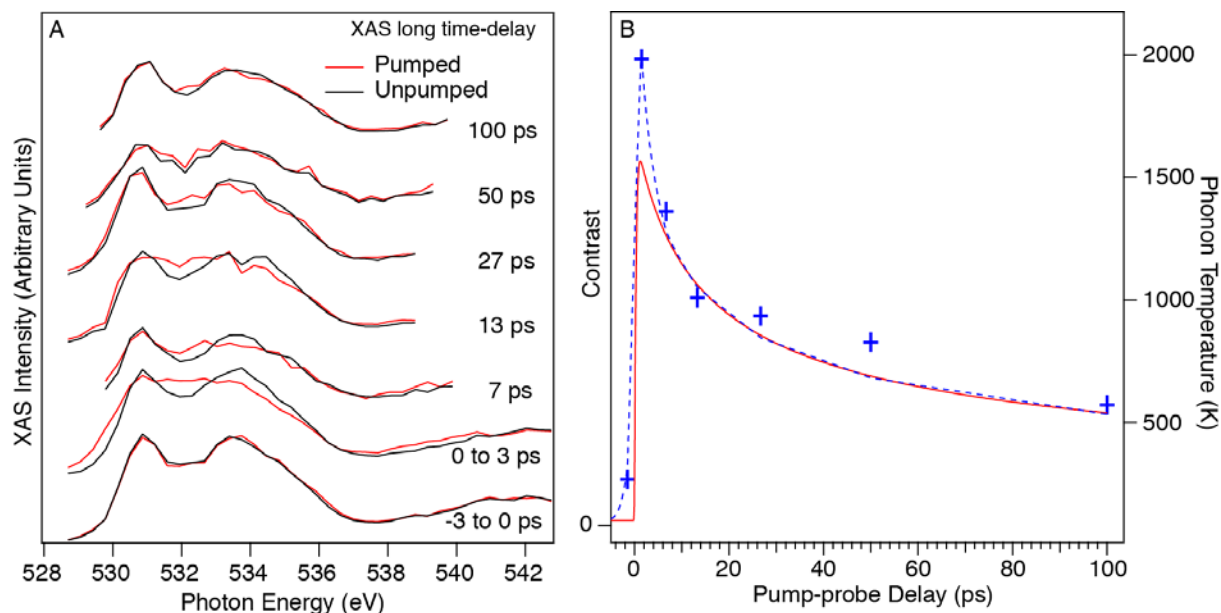


Figure S7. A) Pumped and unpumped x-ray absorption spectra at various time delays up to 100 ps. **B)** Long time-scale evolution of the XAS contrast in the region below 531 eV. The dashed line is included as a guide to the eye. The red line shows the time-evolution of the phonon temperature computed within the two-temperature model. The unpumped spectra that were recorded between the pumped data are shown for the respective delays. Therefore the reference data are not identical for the different delays. Note that the amount of recorded data is a factor 3 lower for the time delays larger than 3 ps, causing the higher noise level in these data.

Detection of CO_2

We note that during the current experiment there is no detected CO_2 in the gas phase. First of all, the reaction yield is rather low. Based on previous mass spectrometry experiments (12), as well as our additional studies we estimate an absolute yield of CO_2 around only 0.5 % of a monolayer per laser shot. In addition, the detection efficiency is strongly enhanced for the molecules adsorbed on the surface. The latter is related to the fact that we use extreme grazing incidence creating a surface standing wave allowing for higher excitation probability for the surface species in comparison to the molecules in the gas phase.

References

1. J. C. Polanyi, A. H. Zewail, Direct observation of the transition state. *Acc. Chem. Res.* **28**, 119–132 (1995). [doi:10.1021/ar00051a005](https://doi.org/10.1021/ar00051a005)
2. A. Stolow, A. E. Bragg, D. M. Neumark, Femtosecond time-resolved photoelectron spectroscopy. *Chem. Rev.* **104**, 1719–1758 (2004). [Medline](https://pubmed.ncbi.nlm.nih.gov/15111111/) [doi:10.1021/cr020683w](https://doi.org/10.1021/cr020683w)
3. P. I. Ionov, S. I. Ionov, C. Wittig, Ultrafast OH production in clusters containing N₂O and HI. *J. Chem. Phys.* **107**, 9457–9463 (1997). [doi:10.1063/1.475242](https://doi.org/10.1063/1.475242)
4. A. J. Orr-Ewing, Perspective: Bimolecular chemical reaction dynamics in liquids. *J. Chem. Phys.* **140**, 090901 (2014). [Medline](https://pubmed.ncbi.nlm.nih.gov/25000000/) [doi:10.1063/1.4866761](https://doi.org/10.1063/1.4866761)
5. N. F. Scherer, C. Sipes, R. B. Bernstein, A. H. Zewail, Real-time clocking of bimolecular reactions: Application to H+CO₂. *J. Chem. Phys.* **92**, 5239–5259 (1990). [doi:10.1063/1.458531](https://doi.org/10.1063/1.458531)
6. G. Ertl, *Reactions at Solid Surfaces* (Wiley, Hoboken, NJ, 2009).
7. J. K. Nørskov, F. Studt, F. Abild-Pedersen, T. Bligaard, *Fundamental Concepts in Heterogeneous Catalysis* (Wiley, 2014).
8. H. Petek, Photoexcitation of adsorbates on metal surfaces: One-step or three-step. *J. Chem. Phys.* **137**, 091704 (2012). [Medline](https://pubmed.ncbi.nlm.nih.gov/22500000/) [doi:10.1063/1.4746801](https://doi.org/10.1063/1.4746801)
9. J. A. Prybyla, T. F. Heinz, J. A. Misewich, M. M. T. Loy, J. H. Glowina, Desorption induced by femtosecond laser pulses. *Phys. Rev. Lett.* **64**, 1537–1540 (1990). [Medline](https://pubmed.ncbi.nlm.nih.gov/641537/) [doi:10.1103/PhysRevLett.64.1537](https://doi.org/10.1103/PhysRevLett.64.1537)
10. F. Kao, D. G. Busch, D. Cohen, D. Gomes da Costa, W. Ho, Femtosecond laser desorption of molecularly adsorbed oxygen from Pt(111). *Phys. Rev. Lett.* **71**, 2094–2097 (1993). [Medline](https://pubmed.ncbi.nlm.nih.gov/712094/) [doi:10.1103/PhysRevLett.71.2094](https://doi.org/10.1103/PhysRevLett.71.2094)
11. T.-H. Her, R. J. Finlay, C. Wu, E. Mazur, Surface femtochemistry of CO/O[_{sub 2}]/Pt(111): The importance of nonthermalized substrate electrons. *J. Chem. Phys.* **108**, 8595 (1998). [doi:10.1063/1.476289](https://doi.org/10.1063/1.476289)
12. M. Bonn, S. Funk, C. Hess, D. N. Denzler, C. Stampfl, M. Scheffler, M. Wolf, G. Ertl, Phonon- versus electron-mediated desorption and oxidation of CO on Ru(0001). *Science* **285**, 1042–1045 (1999). [Medline](https://pubmed.ncbi.nlm.nih.gov/2851042/) [doi:10.1126/science.285.5430.1042](https://doi.org/10.1126/science.285.5430.1042)
13. C. Frischkorn, M. Wolf, Femtochemistry at metal surfaces: Nonadiabatic reaction dynamics. *Chem. Rev.* **106**, 4207–4233 (2006). [Medline](https://pubmed.ncbi.nlm.nih.gov/16500000/) [doi:10.1021/cr050161r](https://doi.org/10.1021/cr050161r)
14. P. Szymanski, A. L. Harris, N. Camillone III, Efficient subpicosecond photoinduced surface chemistry: The ultrafast photooxidation of CO on palladium. *J. Phys. Chem. C* **112**, 15802–15808 (2008). [doi:10.1021/jp8044737](https://doi.org/10.1021/jp8044737)
15. M. Beye, T. Anniyev, R. Coffee, M. Dell'Angela, A. Föhlisch, J. Gladh, T. Katayama, S. Kaya, O. Krupin, A. Møgelhøj, A. Nilsson, D. Nordlund, J. K. Nørskov, H. Öberg, H. Ogasawara, L. G. M. Pettersson, W. F. Schlotter, J. A. Sellberg, F. Sorgenfrei, J. J. Turner, M. Wolf, W. Wurth, H. Oström, Selective ultrafast probing of transient hot chemisorbed and precursor states of CO on Ru(0001). *Phys. Rev. Lett.* **110**, 186101 (2013). [Medline](https://pubmed.ncbi.nlm.nih.gov/24000000/) [doi:10.1103/PhysRevLett.110.186101](https://doi.org/10.1103/PhysRevLett.110.186101)

16. M. Dell'Angela, T. Anniyev, M. Beye, R. Coffee, A. Föhlisch, J. Gladh, T. Katayama, S. Kaya, O. Krupin, J. LaRue, A. Møgelhøj, D. Nordlund, J. K. Nørskov, H. Öberg, H. Ogasawara, H. Oström, L. G. M. Pettersson, W. F. Schlotter, J. A. Sellberg, F. Sorgenfrei, J. J. Turner, M. Wolf, W. Wurth, A. Nilsson, Real-time observation of surface bond breaking with an x-ray laser. *Science* **339**, 1302–1305 (2013). [Medline doi:10.1126/science.1231711](https://doi.org/10.1126/science.1231711)
17. T. Katayama, T. Anniyev, M. Beye, R. Coffee, M. Dell'Angela, A. Föhlisch, J. Gladh, S. Kaya, O. Krupin, A. Nilsson, D. Nordlund, W. F. Schlotter, J. A. Sellberg, F. Sorgenfrei, J. Turner, M. Wolf, W. Wurth, H. Öström, H. Ogasawara, Ultrafast soft x-ray emission spectroscopy of surface adsorbates using a x-ray free electron laser. *J. El. Spec. Rel. Phen.* **187**, 9–14 (2013). [doi:10.1016/j.elspec.2013.03.006](https://doi.org/10.1016/j.elspec.2013.03.006)
18. W. F. Schlotter, J. J. Turner, M. Rowen, P. Heimann, M. Holmes, O. Krupin, M. Messerschmidt, S. Moeller, J. Krzywinski, R. Soufli, M. Fernandez-Perea, N. Kelez, S. Lee, R. Coffee, G. Hays, M. Beye, N. Gerken, F. Sorgenfrei, S. Hau-Riege, L. Juha, J. Chalupsky, V. Hajkova, A. P. Mancuso, A. Singer, O. Yefanov, I. A. Vartanyants, G. Cadenazzi, B. Abbey, K. A. Nugent, H. Sinn, J. Luning, S. Schaffert, S. Eisebitt, W. S. Lee, A. Scherz, A. R. Nilsson, W. Wurth, The soft x-ray instrument for materials studies at the linac coherent light source x-ray free-electron laser. *Rev. Sci. Instrum.* **83**, 043107 (2012). [doi:10.1063/1.3698294](https://doi.org/10.1063/1.3698294)
19. Details of the materials and methods, and supporting analysis of the experimental and theoretical data, are available as supplementary materials at *Science Online*.
20. A. Nilsson, L. G. M. Pettersson, B. Hammer, T. Bligaard, C. H. Christensen, J. K. Nørskov, The electronic structure effect in heterogeneous catalysis. *Catal. Lett.* **100**, 111–114 (2005). [doi:10.1007/s10562-004-3434-9](https://doi.org/10.1007/s10562-004-3434-9)
21. C. Keller, M. Stichler, G. Comelli, F. Esch, S. Lizzit, D. Menzel, W. Wurth, Femtosecond dynamics of adsorbate charge-transfer processes as probed by high-resolution core-level spectroscopy. *Phys. Rev. B* **57**, 11951–11954 (1998). [doi:10.1103/PhysRevB.57.11951](https://doi.org/10.1103/PhysRevB.57.11951)
22. E. O. F. Zdansky, A. Nilsson, H. Tillborg, O. Björneholm, N. Mårtensson, J. N. Andersen, R. Nyholm, Electronic structure of atomic adsorbates from x-ray-absorption spectroscopy: Threshold effects and higher excited states. *Phys. Rev. B* **48**, 2632–2641 (1993). [doi:10.1103/PhysRevB.48.2632](https://doi.org/10.1103/PhysRevB.48.2632)
23. M. Lisowski, P. A. Loukakos, U. Bovensiepen, J. Stähler, C. Gahl, M. Wolf, Ultra-fast dynamics of electron thermalization, cooling and transport effects in Ru(001). *Appl. Phys., A Mater. Sci. Process.* **78**, 165–176 (2004). [doi:10.1007/s00339-003-2301-7](https://doi.org/10.1007/s00339-003-2301-7)
24. L. Triguero, L. G. M. Pettersson, H. Ågren, Calculations of near-edge x-ray-absorption spectra of gas-phase and chemisorbed molecules by means of density-functional and transition-potential theory. *Phys. Rev. B* **58**, 8097–8110 (1998). [doi:10.1103/PhysRevB.58.8097](https://doi.org/10.1103/PhysRevB.58.8097)
25. C. Hess, S. Funk, M. Bonn, D. N. Denzler, M. Wolf, G. Ertl, Femtosecond dynamics of chemical reactions at surfaces. *Appl. Phys., A Mater. Sci. Process.* **71**, 477–483 (2000). [doi:10.1007/s003390000703](https://doi.org/10.1007/s003390000703)

26. H. Tillborg, A. Nilsson, N. Mårtensson, J. N. Andersen, Adsorption-site-dependent x-ray-absorption spectroscopy: CO/H₂/Ni(100). *Phys. Rev. B* **47**, 1699–1702 (1993). [doi:10.1103/PhysRevB.47.1699](https://doi.org/10.1103/PhysRevB.47.1699)
27. H. Tillborg, A. Nilsson, N. Mårtensson, Studies of the CO H₂ Ni(100) system using photoelectron spectroscopy. *Surf. Sci.* **273**, 47–60 (1992). [doi:10.1016/0039-6028\(92\)90275-B](https://doi.org/10.1016/0039-6028(92)90275-B)
28. J. Stöhr, *NEXAFS Spectroscopy*, G. Ertl, R. Gomer, D. L. Mills, Eds., Springer Series in Surface Science (Springer-Verlag, Berlin-Heidelberg, 1992).
29. M. Bonn, C. Hess, S. Funk, J. H. Miners, B. N. J. Persson, M. Wolf, G. Ertl, Femtosecond surface vibrational spectroscopy of CO adsorbed on Ru(001) during desorption. *Phys. Rev. Lett.* **84**, 4653–4656 (2000). [Medline doi:10.1103/PhysRevLett.84.4653](https://pubmed.ncbi.nlm.nih.gov/1103/PhysRevLett.84.4653/)
30. A. C. Luntz, in *Chemical Bonding at Surfaces and Interfaces*, A. Nilsson, L. G. M. Pettersson, J. K. Nørskov, Eds. (Elsevier, 2008).
31. B. Narloch, G. Held, D. Menzel, Structural rearrangement by coadsorption: A LEED IV determination of the Ru(001)-p(2x2)(2O+CO) structure. *Surf. Sci.* **317**, 131–142 (1994). [doi:10.1016/0039-6028\(94\)90260-7](https://doi.org/10.1016/0039-6028(94)90260-7)
32. C. Gahl, A. Azima, M. Beye, M. Deppe, K. Döbrich, U. Hasslinger, F. Hennies, A. Melnikov, M. Nagasono, A. Pietzsch, M. Wolf, W. Wurth, A. Föhlisch, A femtosecond x-ray/optical cross-correlator. *Nat. Photonics* **2**, 165–169 (2008). [doi:10.1038/nphoton.2007.298](https://doi.org/10.1038/nphoton.2007.298)
33. M. Beye, O. Krupin, G. Hays, A. H. Reid, D. Rupp, S. d. Jong, S. Lee, W.-S. Lee, Y.-D. Chuang, R. Coffee, J. P. Cryan, J. M. Glowia, A. Föhlisch, M. R. Holmes, A. R. Fry, W. E. White, C. Bostedt, A. O. Scherz, H. A. Durr, W. F. Schlotter, X-ray pulse preserving single-shot optical cross-correlation method for improved experimental temporal resolution. *Appl. Phys. Lett.* **100**, 121108 (2012).
34. J. Enkovaara, C. Rostgaard, J. J. Mortensen, J. Chen, M. Dułak, L. Ferrighi, J. Gavnholt, C. Glinsvad, V. Haikola, H. A. Hansen, H. H. Kristoffersen, M. Kuisma, A. H. Larsen, L. Lehtovaara, M. Ljungberg, O. Lopez-Acevedo, P. G. Moses, J. Ojanen, T. Olsen, V. Petzold, N. A. Romero, J. Stausholm-Møller, M. Strange, G. A. Tritsarlis, M. Vanin, M. Walter, B. Hammer, H. Häkkinen, G. K. H. Madsen, R. M. Nieminen, J. K. Nørskov, M. Puska, T. T. Rantala, J. Schiøtz, K. S. Thygesen, K. W. Jacobsen, Electronic structure calculations with GPAW: A real-space implementation of the projector augmented-wave method. *J. Phys. Condens. Matter* **22**, 253202 (2010). [Medline doi:10.1088/0953-8984/22/25/253202](https://pubmed.ncbi.nlm.nih.gov/10.1088/0953-8984/22/25/253202/)
35. J. J. Mortensen, L. B. Hansen, K. W. Jacobsen, Real-space grid implementation of the projector augmented wave method. *Phys. Rev. B* **71**, 035109 (2005). [doi:10.1103/PhysRevB.71.035109](https://doi.org/10.1103/PhysRevB.71.035109)
36. B. Hammer, L. B. Hansen, J. K. Nørskov, Improved adsorption energetics within density-functional theory using revised Perdew-Burke-Ernzerhof functionals. *Phys. Rev. B* **59**, 7413–7421 (1999). [doi:10.1103/PhysRevB.59.7413](https://doi.org/10.1103/PhysRevB.59.7413)

37. G. Henkelman, G. Uberuaga, H. Jónsson, A climbing image nudged elastic band method for finding saddle points and minimum energy paths. *J. Chem. Phys.* **113**, 9901 (2000). [doi:10.1063/1.1329672](https://doi.org/10.1063/1.1329672)
38. M. P. Ljungberg, J. J. Mortensen, L. G. M. Pettersson, An implementation of core level spectroscopies in a real space Projector Augmented Wave density functional theory code. *J. El. Spect. Rel. Phen.* **184**, 427–439 (2011). [doi:10.1016/j.elspec.2011.05.004](https://doi.org/10.1016/j.elspec.2011.05.004)
39. H. Öberg, T. Anniyev, A. Vojvodic, S. Kaya, H. Ogasawara, D. Friebel, D. J. Miller, D. Nordlund, U. Bergmann, M. P. Ljungberg, F. Abild-Pedersen, A. Nilsson, L. G. M. Pettersson, Stability of Pt-modified Cu(111) in the presence of oxygen and its implication on the overall electronic structure. *J. Phys. Chem. C* **117**, 16371–16380 (2013). [doi:10.1021/jp400486r](https://doi.org/10.1021/jp400486r)
40. S. I. Anisimov, B. L. Kapeliovich, T. L. Perel'man, Electron emission from metal surfaces exposed to ultrashort laser pulses. *Sov. Phys. JETP* **39**, 375–377 (1974).
41. M. Brandbyge, P. Hedegård, T. F. Heinz, J. A. Misewich, D. M. Newns, Electronically driven adsorbate excitation mechanism in femtosecond-pulse laser desorption. *Phys. Rev. B Condens. Matter* **52**, 6042–6056 (1995). [Medline doi:10.1103/PhysRevB.52.6042](https://doi.org/10.1103/PhysRevB.52.6042)
42. S. Wagner, H. Öström, A. Kaebe, M. Krenz, M. Wolf, A. C. Luntz, C. Frischkorn, Activated associative desorption of C + O → CO from Ru(001) induced by femtosecond laser pulses. *New J. Phys.* **10**, 125031 (2008). [doi:10.1088/1367-2630/10/12/125031](https://doi.org/10.1088/1367-2630/10/12/125031)
43. S. Funk, M. Bonn, D. N. Denzler, C. Hess, M. Wolf, G. Ertl, Desorption of CO from Ru(001) induced by near infrared femtosecond laser pulses. *J. Chem. Phys.* **112**, 9888 (2000). [doi:10.1063/1.481626](https://doi.org/10.1063/1.481626)
44. J. Gladh, T. Hansson, H. Öström, Electron- and phonon-coupling in femtosecond laser-induced desorption of CO from Ru(0001). *Surf. Sci.* **615**, 65–71 (2013). [doi:10.1016/j.susc.2013.05.002](https://doi.org/10.1016/j.susc.2013.05.002)
45. A. C. Luntz, M. Persson, S. Wagner, C. Frischkorn, M. Wolf, Femtosecond laser induced associative desorption of H₂ from Ru(0001): Comparison of “first principles” theory with experiment. *J. Chem. Phys.* **124**, 244702 (2006). [Medline doi:10.1063/1.2206588](https://doi.org/10.1063/1.2206588)
46. P. Giannozzi, S. Baroni, N. Bonini, M. Calandra, R. Car, C. Cavazzoni, D. Ceresoli, G. L. Chiarotti, M. Cococcioni, I. Dabo, A. Dal Corso, S. de Gironcoli, S. Fabris, G. Fratesi, R. Gebauer, U. Gerstmann, C. Gougoussis, A. Kokalj, M. Lazzeri, L. Martin-Samos, N. Marzari, F. Mauri, R. Mazzarello, S. Paolini, A. Pasquarello, L. Paulatto, C. Sbraccia, S. Scandolo, G. Sclauzero, A. P. Seitsonen, A. Smogunov, P. Umari, R. M. Wentzcovitch, QUANTUM ESPRESSO: A modular and open-source software project for quantum simulations of materials. *J. Phys. Condens. Matter* **21**, 395502 (2009). [Medline doi:10.1088/0953-8984/21/39/395502](https://doi.org/10.1088/0953-8984/21/39/395502)

Data: Coordinates (Ångström) for DFT optimized structures

Lattice (non-orthogonal):

[5.4, 0.0, 0.0], [2.7, 4.68, 0.0], [0.0, 0.0, 34.42]

IS

Ru	0.0000000000000000	1.558845726811990	14.000000000000000
Ru	2.7000000000000000	1.558845726811990	14.000000000000000
Ru	1.3500000000000000	3.897114317029974	14.000000000000000
Ru	4.0500000000000001	3.897114317029974	14.000000000000000
Ru	0.0000000000000000	0.0000000000000000	16.138400000000001
Ru	2.7000000000000000	0.0000000000000000	16.138400000000001
Ru	1.3500000000000000	2.338268590217984	16.138400000000001
Ru	4.0500000000000001	2.338268590217984	16.138400000000001
Ru	-0.0000000000000000	1.568688782162425	18.361281391868765
Ru	2.7000000000000000	1.558845726811990	18.274138977107022
Ru	1.341475664015666	3.892192789354755	18.361281391868765
Ru	4.058524335984333	3.892192789354755	18.361281391868765
Ru	-0.0000000000000000	-0.0000000000000000	20.580028841470298
Ru	2.7000000000000000	-0.058028151895386	20.542776480720690
Ru	1.299746146323934	2.367282666165676	20.542776480720690
Ru	4.100253853676068	2.367282666165676	20.542776480720690
C	-0.0000000000000000	-0.0000000000000000	22.534776129527724
O	0.0000000000000000	0.0000000000000000	23.692475307107784
O	2.7000000000000000	1.558845726811990	21.814345572447117
O	-2.7000000000000000	-1.558845726811990	21.983893329004854

TS1

Ru	0.0000000000000000	1.558845726811990	14.000000000000000
Ru	2.7000000000000000	1.558845726811990	14.000000000000000
Ru	1.3500000000000000	3.897114317029974	14.000000000000000
Ru	4.0500000000000001	3.897114317029974	14.000000000000000
Ru	0.0000000000000000	0.0000000000000000	16.138400000000001
Ru	2.7000000000000000	0.0000000000000000	16.138400000000001
Ru	1.3500000000000000	2.338268590217984	16.138400000000001
Ru	4.0500000000000001	2.338268590217984	16.138400000000001
Ru	0.005714790395144	1.577204344425779	18.341460772404918
Ru	2.690048801036996	1.568348322680915	18.320312030876980
Ru	1.317394535306556	3.892478171505979	18.356146204354708
Ru	4.054161229022029	3.920113722370723	18.340740727789292
Ru	-0.044485418868528	-0.002935218240716	20.472433329683717
Ru	2.660714921884823	-0.070230239772036	20.572749226707103
Ru	1.249871693082015	2.369804849573589	20.573277016808721
Ru	4.047054243611771	2.360970019290024	20.454928149500720
C	-0.567711727456461	-0.286626577475689	22.473144510420742
O	-0.299505389993155	-0.106845856482761	23.600846296651245
O	2.700789581393455	1.584792584705508	21.773527704872340

O -2.070883565964825 -1.172003100205635 22.209880252354683

IMS

Ru 0.000000000000000 1.558845726811990 14.000000000000000
Ru 2.700000000000000 1.558845726811990 14.000000000000000
Ru 1.350000000000000 3.897114317029974 14.000000000000000
Ru 4.050000000000001 3.897114317029974 14.000000000000000
Ru 0.000000000000000 0.000000000000000 16.138400000000001
Ru 2.700000000000000 0.000000000000000 16.138400000000001
Ru 1.350000000000000 2.338268590217984 16.138400000000001
Ru 4.050000000000001 2.338268590217984 16.138400000000001
Ru 0.001112081012976 1.569244594657515 18.331621940955760
Ru 2.685753171968244 1.568830646146071 18.351846818117977
Ru 1.333319707712991 3.905256485866206 18.371206748422498
Ru 4.042702166175444 3.923363473870655 18.329038541686533
Ru -0.042862707922683 0.002250063594450 20.521727795903512
Ru 2.659909796624201 -0.070852746469248 20.548496930021134
Ru 1.243636109031162 2.377319467183049 20.550132533374331
Ru 4.051034769842811 2.366976699923021 20.443796493796405
C -0.816528209513709 -0.415582469985310 22.472165729365948
O -0.250419974748218 -0.048974672674091 23.474308017083633
O 2.689160522534990 1.584677103427607 21.740106553542024
O -1.980207845208930 -1.109636895687058 22.381952295397177

TS2

Ru 0.000000000000000 1.558845726811990 14.000000000000000
Ru 2.700000000000000 1.558845726811990 14.000000000000000
Ru 1.350000000000000 3.897114317029974 14.000000000000000
Ru 4.050000000000001 3.897114317029974 14.000000000000000
Ru 0.000000000000000 0.000000000000000 16.138400000000001
Ru 2.700000000000000 0.000000000000000 16.138400000000001
Ru 1.350000000000000 2.338268590217984 16.138400000000001
Ru 4.050000000000001 2.338268590217984 16.138400000000001
Ru -0.000845497399094 1.573724444030939 18.335680379169183
Ru 2.687380963341219 1.573122292008750 18.365263782479612
Ru 1.333266541119125 3.909341518731099 18.368363129887676
Ru 4.041379389886479 3.924750869921627 18.333924290863344
Ru -0.029134785296501 0.015329690756442 20.491641589588703
Ru 2.669691236768347 -0.064102061016709 20.549807895681116
Ru 1.256466905569675 2.387431794351306 20.550331685982069
Ru 4.069295522804567 2.379245692492364 20.451954878963125
C -0.882062379686336 -0.453706519511120 22.651330812372894
O -1.993251684241157 -1.117565852416192 22.501226835814069
O -0.243104496313153 -0.054724437009293 23.586890099239149
O 2.706520531450657 1.594390420404407 21.744228807418526

Data: Computed MEP

First column gives the distance (Ångström) along the reaction coordinate defined as in the main manuscript. The second column gives the energy (eV) relative the initial state (IS).

1.9859867e+00	-9.9442000e-02	FS
1.9907833e+00	2.3025490e-01	
1.9904201e+00	1.5920420e-01	
1.9897007e+00	3.0952920e-01	
1.9877436e+00	3.9656920e-01	
1.9832386e+00	4.8524230e-01	
1.9794334e+00	5.7300690e-01	
1.9747060e+00	6.5034540e-01	
1.8869867e+00	1.0440760e+00	
1.8585677e+00	1.1184588e+00	TS2
1.8545157e+00	1.1107779e+00	
1.8477282e+00	1.0963495e+00	
1.8242673e+00	1.0358792e+00	
1.8080470e+00	1.0078600e+00	IMS
1.7926231e+00	1.0098010e+00	
1.7649329e+00	1.0251870e+00	
1.7061465e+00	1.0628410e+00	
1.6304734e+00	1.1201610e+00	
1.6023568e+00	1.1410370e+00	
1.5546780e+00	1.1750110e+00	
1.4852133e+00	1.2094740e+00	
1.4508137e+00	1.2191010e+00	
1.4224330e+00	1.2225895e+00	
1.4157177e+00	1.2230340e+00	
1.4016950e+00	1.2232420e+00	TS1
1.3871505e+00	1.2227470e+00	
1.3818354e+00	1.2220590e+00	
1.3473315e+00	1.2164130e+00	
1.3128127e+00	1.2059510e+00	
1.2782842e+00	1.1920600e+00	
1.2436724e+00	1.1727280e+00	
1.1219891e+00	1.0746270e+00	
1.0461180e+00	9.9336500e-01	
1.0012930e+00	9.3428300e-01	
8.8205195e-01	7.6835400e-01	
7.6152566e-01	5.9963900e-01	
4.7990751e-01	2.1934600e-01	
1.7418266e-01	2.1385000e-02	
-0.0000000e+00	0.0000000e+00	IS

Data: Free-energy (eV) profiles from Figure 2A.

Coordinate (Å)	0 K	1000 K	2000 K	3000 K
-0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
0.174182600	0.021380000	0.021364235	0.021348868	0.021333403
0.479907500	0.219340000	0.192929605	0.167185386	0.141276694
0.761525600	0.599640000	0.523442889	0.447953839	0.372283877
1.001293000	0.934280000	0.813746245	0.695532316	0.576787936
1.243672400	1.172730000	1.066281540	0.963073414	0.859184119
1.401695000	1.223240000	1.134660913	1.049817318	0.964224265
1.602356800	1.141040000	1.026008686	0.920626086	0.813380471
1.808047000	1.007860000	0.934434383	0.865398516	0.795686140
1.854515700	1.110780000	1.044029974	0.970457174	0.898403667
1.974706000	0.650340000	0.512183193	0.345995649	0.185462061
1.985986700	-0.099440000	-0.309151137	-0.546159719	-0.777673685

Data: Experimental XA spectra from Figure 1

XAS spectra, Fig. 1A

Energy (eV)	-3 to 0 ps delay	1.5 to 3 ps delay
528.7	0.868132	0.364407
529.06	1.27069	0.678756
529.421	2.32463	1.16488
529.781	3.93843	1.92079
530.142	5.08775	4.24938
530.502	7.05714	6.73537
530.863	7.91364	8.12815
531.223	7.19952	7.57288
531.583	7.47392	5.97655
531.944	8.04926	5.94653
532.304	7.72472	6.20414
532.665	7.67666	6.21785
533.025	7.43278	7.48637
533.386	7.24101	8.04037
533.746	6.80499	8.24175
534.107	6.46396	7.6065
534.467	5.80377	6.70295
534.827	5.23256	6.40096
535.188	4.62646	5.46915
535.548	4.1787	4.70488
535.909	3.43077	4.05669
536.269	2.6242	3.1575
536.63	2.07424	2.37376
536.99	2.24429	1.95207
537.35	1.91489	1.78201
537.711	2.07609	1.76704
538.071	2.27273	1.88342
538.432	2.34249	2.02049
538.792	2.54264	2.31134
539.153	3.05735	2.16863
539.513	3.14103	2.54742
539.873	3.13167	2.74723
540.234	3.30255	2.97796
540.594	3.42701	3.34552
540.955	3.35862	3.61429
541.315	3.49301	3.41931
541.676	3.45894	3.54296
542.036	3.69141	3.51341
542.396	3.70323	3.61103
542.757	3.44074	3.28836

XAS contrasts, Fig. 1B:

Delay (ps)	O* region	O*-CO region	CO* region	OC-O* region
-3.20513	0.0506107	-0.0341787	0.00383805	0.0278488
-2.94872	0.0643648	-0.0167728	0.0174189	-0.00436793
-2.69231	0.0733457	0.0312107	0.0208702	0.0376858
-2.4359	0.00874243	-0.0185423	-0.00558586	-0.0242779
-2.17949	0.0113248	-0.0313534	-0.0396639	0.0287764
-1.92308	0.0648761	0.0161359	0.023955	0.0115473
-1.66667	-0.0225117	0.0145479	-0.0106733	0.032459
-1.41026	0.00334461	-0.00170135	0.0130559	0.0142219
-1.15385	0.0223149	-0.013038	-0.00574212	0.0154264
-0.897436	0.00914565	-0.0649159	0.00404708	0.0193872
-0.641026	0.0236321	-0.051588	0.00288229	-0.0122272
-0.384615	0.0133392	0.0262425	0.0116257	0.0382189
-0.128205	0.113943	-0.00805502	-0.0142056	-0.0183054
0.128205	0.288294	0.0141503	-0.0339266	0.00674683
0.384615	0.360944	0.0713524	-0.0576007	0.0491577
0.641026	0.330868	0.0758255	-0.0787966	0.108033
0.897436	0.302127	0.0835126	-0.0566537	0.0566201
1.15385	0.351333	0.0831373	-0.0705128	0.0693204
1.41026	0.256999	0.0983306	-0.072061	0.0832325
1.66667	0.304998	0.0981298	-0.0850299	0.0890966
1.92308	0.317335	0.0809887	-0.0546522	0.0985793
2.17949	0.309538	0.110359	-0.0894425	0.0749641
2.4359	0.322596	0.11569	-0.0600731	0.103583
2.69231	0.344532	0.0976412	-0.0688091	0.100534
2.94872	0.350835	0.0691432	-0.0583002	0.106389
3.20513	0.349743	0.11111	-0.069776	0.0322816

Data: Computed XA spectra from Figure 2
Cross-section (arbitrary units) vs. Energy (eV)

IS O

5.257486766488729018e+02 5.250562371960679080e-13
5.258486766488729245e+02 1.882269150370561294e-12
5.259486766488729472e+02 5.873381205862273477e-12
5.260486766488728563e+02 1.706075000083380813e-11
5.261486766488728790e+02 4.843068342296405380e-11
5.262486766488729018e+02 1.372189469711543882e-10
5.263486766488729245e+02 3.903943494809154979e-10
5.264486766488729472e+02 1.116032030173620524e-09
5.265486766488728563e+02 3.203362228346706455e-09
5.266486766488728790e+02 9.198562410616399597e-09
5.267486766488729018e+02 2.627098521509766683e-08
5.268486766488729245e+02 7.426807830592199497e-08
5.269486766488729472e+02 2.076871187661715856e-07
5.270486766488728563e+02 5.764837400346070123e-07
5.271486766488728790e+02 1.594943301860346634e-06
5.272486766488729018e+02 4.402206379732068048e-06
5.273486766488729245e+02 1.208004326819537514e-05
5.274486766488729472e+02 3.278399203960792602e-05
5.275486766488728563e+02 8.764039563893264763e-05
5.276486766488728790e+02 2.303554974870557410e-04
5.277486766488729018e+02 5.952787326818103795e-04
5.278486766488729245e+02 1.515014293270952302e-03
5.279486766488729472e+02 3.810882681498959507e-03
5.280486766488728563e+02 9.513410460990150488e-03
5.281486766488728790e+02 2.364429771746597714e-02
5.282486766488729018e+02 5.866304512174028846e-02
5.283486766488729245e+02 1.458872388280044174e-01
5.284486766488729472e+02 3.656896081114373587e-01
5.285486766488728563e+02 9.277018743675653489e-01
5.286486766488728790e+02 2.373918409384277339e+00
5.287486766488729018e+02 6.002981375931499386e+00
5.288486766488729245e+02 1.422776663745832693e+01
5.289486766488729472e+02 2.893488327354825884e+01
5.290486766488728563e+02 4.704662803851152830e+01
5.291486766488728790e+02 6.238829564847683429e+01
5.292486766488729018e+02 7.305256605395913994e+01
5.293486766488729245e+02 8.051758292831067365e+01
5.294486766488729472e+02 8.619489762808967726e+01
5.295486766488728563e+02 9.081236599851956726e+01
5.296486766488728790e+02 9.483906424588484185e+01
5.297486766488729018e+02 9.871005281828057321e+01
5.298486766488729245e+02 1.027902558035496554e+02

5.299486766488729472e+02 1.072636269386246965e+02
5.300486766488728563e+02 1.120100764288846591e+02
5.301486766488728790e+02 1.165033008134190311e+02
5.302486766488729018e+02 1.198554791670237591e+02
5.303486766488729245e+02 1.211078250607509261e+02
5.304486766488729472e+02 1.196391817607257622e+02
5.305486766488728563e+02 1.152807442326546550e+02
5.306486766488728790e+02 1.080099616505593048e+02
5.307486766488729018e+02 9.807544639303125678e+01
5.308486766488729245e+02 8.684384506468273912e+01
5.309486766488729472e+02 7.659248197669782598e+01
5.310486766488728563e+02 6.876436292687901641e+01
5.311486766488728790e+02 6.313726534917515210e+01
5.312486766488729018e+02 5.875387984990671697e+01
5.313486766488729245e+02 5.489376677312471742e+01
5.314486766488729472e+02 5.124019847049776644e+01
5.315486766488728563e+02 4.771043828265911202e+01
5.316486766488728790e+02 4.432435900929592520e+01
5.317486766488729018e+02 4.114052457106402017e+01
5.318486766488729245e+02 3.822029910403382758e+01
5.319486766488729472e+02 3.560421003448700361e+01
5.320486766488728563e+02 3.329940155188798911e+01
5.321486766488728790e+02 3.127969523165269194e+01
5.322486766488729018e+02 2.949673944093588318e+01
5.323486766488729245e+02 2.789664325674690559e+01
5.324486766488729472e+02 2.643496450255286234e+01
5.325486766488728563e+02 2.508489425941839102e+01
5.326486766488728790e+02 2.383735871854299404e+01
5.327486766488729018e+02 2.269521478587976304e+01
5.328486766488729245e+02 2.166530335373494864e+01
5.329486766488729472e+02 2.075175399805909393e+01
5.330486766488728563e+02 1.995241626088899523e+01
5.331486766488728790e+02 1.925861657615637057e+01
5.332486766488729018e+02 1.865728246877249674e+01
5.333486766488729245e+02 1.813405255612113365e+01
5.334486766488729472e+02 1.767616446704740696e+01
5.335486766488728563e+02 1.727439208357043299e+01
5.336486766488728790e+02 1.692381473626016231e+01
5.337486766488729018e+02 1.662357584870949978e+01
5.338486766488729245e+02 1.637597447047413368e+01
5.339486766488729472e+02 1.618525824850331674e+01
5.340486766488728563e+02 1.605641334256528552e+01
5.341486766488728790e+02 1.599413747526894625e+01
5.342486766488729018e+02 1.600207991198224278e+01
5.343486766488729245e+02 1.608235782433100525e+01
5.344486766488729472e+02 1.623531607535431576e+01

5.345486766488728563e+02 1.645948089223777089e+01
5.346486766488728790e+02 1.675165756275944773e+01
5.347486766488729018e+02 1.710712933235720357e+01
5.348486766488729245e+02 1.751992297287673495e+01
5.349486766488729472e+02 1.798311302610073881e+01
5.350486766488728563e+02 1.848914093340798814e+01
5.351486766488728790e+02 1.903012800115615732e+01
5.352486766488729018e+02 1.959816369606524944e+01
5.353486766488729245e+02 2.018555411381913700e+01
5.354486766488729472e+02 2.078502000294286489e+01
5.355486766488728563e+02 2.138983921514439146e+01
5.356486766488728790e+02 2.199393422199531045e+01
5.357486766488729018e+02 2.259191055933495562e+01
5.358486766488729245e+02 2.317905600610565386e+01
5.359486766488729472e+02 2.375131251340995320e+01
5.360486766488728563e+02 2.430523325035763094e+01
5.361486766488728790e+02 2.483793582016927459e+01
5.362486766488729018e+02 2.534706015078130648e+01
5.363486766488729245e+02 2.583073632864491387e+01
5.364486766488729472e+02 2.628756428402956757e+01
5.365486766488728563e+02 2.671660423505384685e+01
5.366486766488728790e+02 2.711737450506206315e+01
5.367486766488729018e+02 2.748985193385082937e+01
5.368486766488729245e+02 2.783446964311155725e+01
5.369486766488729472e+02 2.815210729706545578e+01
5.370486766488728563e+02 2.844407003667325284e+01
5.371486766488728790e+02 2.871205372719681748e+01
5.372486766488729018e+02 2.895809580165584407e+01
5.373486766488729245e+02 2.918451258612884303e+01
5.374486766488729472e+02 2.939382538000630518e+01
5.375486766488728563e+02 2.958867861392549159e+01
5.376486766488728790e+02 2.977175405702416811e+01
5.377486766488729018e+02 2.994568528345726577e+01
5.378486766488729245e+02 3.011297646942812989e+01
5.379486766488729472e+02 3.027592914093179388e+01
5.380486766488728563e+02 3.043657981170274951e+01
5.381486766488728790e+02 3.059665062933439117e+01
5.382486766488729018e+02 3.075751427036929897e+01
5.383486766488729245e+02 3.092017346670536426e+01
5.384486766488729472e+02 3.108525476507598739e+01
5.385486766488728563e+02 3.125301546070190994e+01
5.386486766488728790e+02 3.142336213058715089e+01
5.387486766488729018e+02 3.159587883117676199e+01
5.388486766488729245e+02 3.176986281635380749e+01
5.389486766488729472e+02 3.194436556253808135e+01
5.390486766488728563e+02 3.211823693891878406e+01

5.391486766488728790e+02 3.229017050985867598e+01
5.392486766488729018e+02 3.245874817919457200e+01
5.393486766488729245e+02 3.262248265905003564e+01
5.394486766488729472e+02 3.277985654731360654e+01
5.395486766488728563e+02 3.292935710932524529e+01
5.396486766488728790e+02 3.306950616494174966e+01
5.397486766488729018e+02 3.319888476967044255e+01
5.398486766488729245e+02 3.331615263873815991e+01
5.399486766488729472e+02 3.342006248936654345e+01
5.400486766488728563e+02 3.350946966516005432e+01
5.401486766488728790e+02 3.358333755539770493e+01
5.402486766488729018e+02 3.364073943084002849e+01
5.403486766488729245e+02 3.368085738741801549e+01
5.404486766488729472e+02 3.370297912192426537e+01
5.405486766488728563e+02 3.370649326248037880e+01
5.406486766488728790e+02 3.369088394468522552e+01
5.407486766488729018e+02 3.365572526607548554e+01
5.408486766488729245e+02 3.360067617139606000e+01
5.409486766488729472e+02 3.352547622403987049e+01
5.410486766488728563e+02 3.342994260993665989e+01
5.411486766488728790e+02 3.331396860427788909e+01
5.412486766488729018e+02 3.317752361383351456e+01
5.413486766488729245e+02 3.302065479310149243e+01
5.414486766488729472e+02 3.284349012563377102e+01
5.415486766488728563e+02 3.264624276658487645e+01
5.416486766488728790e+02 3.242921636217846526e+01
5.417486766488729018e+02 3.219281099897046516e+01
5.418486766488729245e+02 3.193752939225202070e+01
5.419486766488729472e+02 3.166398289956048728e+01
5.420486766488728563e+02 3.137289694202613077e+01
5.421486766488728790e+02 3.106511543231858496e+01
5.422486766488729018e+02 3.074160384161734783e+01
5.423486766488729245e+02 3.040345058701047520e+01
5.424486766488729472e+02 3.005186648216893985e+01
5.425486766488728563e+02 2.968818206482683664e+01
5.426486766488728790e+02 2.931384269107821083e+01
5.427486766488729018e+02 2.893040136528362893e+01
5.428486766488729245e+02 2.853950935208930062e+01
5.429486766488729472e+02 2.814290469057092281e+01
5.430486766488728563e+02 2.774239879708038714e+01
5.431486766488728790e+02 2.733986140072875060e+01
5.432486766488729018e+02 2.693720410185930803e+01
5.433486766488729245e+02 2.653636287821227668e+01
5.434486766488729472e+02 2.613927988520575241e+01
5.435486766488728563e+02 2.574788490587873824e+01
5.436486766488728790e+02 2.536407680310519197e+01

5.437486766488729018e+02 2.498970531269749173e+01
5.438486766488729245e+02 2.462655349235479463e+01
5.439486766488729472e+02 2.427632110974322543e+01
5.440486766488728563e+02 2.394060921517184681e+01
5.441486766488728790e+02 2.362090610230014320e+01
5.442486766488729018e+02 2.331857481601399940e+01
5.443486766488729245e+02 2.303484232189810044e+01
5.444486766488729472e+02 2.277079040830279411e+01
5.445486766488728563e+02 2.252734835133054503e+01
5.446486766488728790e+02 2.230528733635862793e+01
5.447486766488729018e+02 2.210521659789475990e+01
5.448486766488729245e+02 2.192758121324355969e+01
5.449486766488729472e+02 2.177266146495849952e+01
5.450486766488728563e+02 2.164057367239421836e+01
5.451486766488728790e+02 2.153127238362258922e+01
5.452486766488729018e+02 2.144455381507303571e+01
5.453486766488729245e+02 2.138006042686065911e+01
5.454486766488729472e+02 2.133728652609021026e+01
5.455486766488728563e+02 2.131558479760006009e+01
5.456486766488728790e+02 2.131417367071795965e+01
5.457486766488729018e+02 2.133214544072513164e+01
5.458486766488729245e+02 2.136847507399442847e+01
5.459486766488729472e+02 2.142202963538226612e+01
5.460486766488728563e+02 2.149157828472878151e+01
5.461486766488728790e+02 2.157580279569239678e+01
5.462486766488729018e+02 2.167330855420710378e+01
5.463486766488729245e+02 2.178263599534286854e+01
5.464486766488729472e+02 2.190227243617454178e+01
5.465486766488728563e+02 2.203066425847901399e+01
5.466486766488728790e+02 2.216622938888050953e+01
5.467486766488729018e+02 2.230737001578205891e+01
5.468486766488729245e+02 2.245248547249569882e+01
5.469486766488729472e+02 2.259998520494421470e+01
5.470486766488728563e+02 2.274830173074651896e+01
5.471486766488728790e+02 2.289590348505006290e+01
5.472486766488729018e+02 2.304130743778078383e+01
5.473486766488729245e+02 2.318309135767505680e+01
5.474486766488729472e+02 2.331990559112948347e+01
5.475486766488728563e+02 2.345048421908444425e+01
5.476486766488728790e+02 2.357365545328690715e+01
5.477486766488729018e+02 2.368835113470717246e+01
5.478486766488729245e+02 2.379361520183596213e+01
5.479486766488729472e+02 2.388861100517011593e+01
5.480486766488728563e+02 2.397262735637558251e+01
5.481486766488728790e+02 2.404508321623834632e+01
5.482486766488729018e+02 2.410553094428455623e+01

5.483486766488729245e+02 2.415365805446548109e+01
5.484486766488729472e+02 2.418928744504020756e+01
5.485486766488728563e+02 2.421237609614403397e+01
5.486486766488728790e+02 2.422301225482438980e+01
5.487486766488729018e+02 2.422141115383404397e+01
5.488486766488729245e+02 2.420790933644478216e+01
5.489486766488729472e+02 2.418295768424282599e+01
5.490486766488728563e+02 2.414711326757709742e+01
5.491486766488728790e+02 2.410103015839754192e+01
5.492486766488729018e+02 2.404544936207174999e+01
5.493486766488729245e+02 2.398118803792807441e+01
5.494486766488729472e+02 2.390912818739359125e+01
5.495486766488728563e+02 2.383020499345117571e+01
5.496486766488728790e+02 2.374539499565486267e+01
5.497486766488729018e+02 2.365570428117556290e+01
5.498486766488729245e+02 2.356215686450397584e+01
5.499486766488729472e+02 2.346578341684724478e+01
5.500486766488728563e+02 2.336761049136872970e+01
5.501486766488728790e+02 2.326865037278988524e+01
5.502486766488729018e+02 2.316989166012177037e+01
5.503486766488729245e+02 2.307229067010543133e+01
5.504486766488729472e+02 2.297676372701739211e+01
5.505486766488728563e+02 2.288418038254224740e+01
5.506486766488728790e+02 2.279535758810786916e+01
5.507486766488729018e+02 2.271105482203667236e+01
5.508486766488729245e+02 2.263197015564060166e+01
5.509486766488729472e+02 2.255873722642588319e+01
5.510486766488728563e+02 2.249192307322259410e+01
5.511486766488728790e+02 2.243202677753803442e+01
5.512486766488729018e+02 2.237947884785607400e+01
5.513486766488729245e+02 2.233464127894987783e+01
5.514486766488729472e+02 2.229780821641239186e+01
5.515486766488728563e+02 2.226920715730035027e+01
5.516486766488728790e+02 2.224900062071294826e+01
5.517486766488729018e+02 2.223728822688850926e+01
5.518486766488729245e+02 2.223410912955951346e+01
5.519486766488729472e+02 2.223944475338438309e+01
5.520486766488728563e+02 2.225322179579547921e+01
5.521486766488728790e+02 2.227531546010257557e+01
5.522486766488729018e+02 2.230555289374110828e+01
5.523486766488729245e+02 2.234371681177655944e+01
5.524486766488729472e+02 2.238954929086219181e+01
5.525486766488728563e+02 2.244275572255795126e+01
5.526486766488728790e+02 2.250300891710798368e+01
5.527486766488729018e+02 2.256995334937355580e+01
5.528486766488729245e+02 2.264320953764853783e+01

5.529486766488729472e+02 2.272237854364458798e+01
5.530486766488728563e+02 2.280704657819337200e+01
5.531486766488728790e+02 2.289678969240470252e+01
5.532486766488729018e+02 2.299117852842049103e+01
5.533486766488729245e+02 2.308978309782824212e+01
5.534486766488729472e+02 2.319217754957202260e+01
5.535486766488728563e+02 2.329794488315992496e+01
5.536486766488728790e+02 2.340668155743435008e+01
5.537486766488729018e+02 2.351800194044451331e+01
5.538486766488729245e+02 2.363154254230257578e+01
5.539486766488729472e+02 2.374696597053250713e+01
5.540486766488728563e+02 2.386396454650294174e+01
5.541486766488728790e+02 2.398226352218177126e+01
5.542486766488729018e+02 2.410162383871819003e+01
5.543486766488729245e+02 2.422184437224203890e+01
5.544486766488729472e+02 2.434276361771812702e+01
5.545486766488728563e+02 2.446426076859816234e+01
5.546486766488728790e+02 2.458625615822854016e+01
5.547486766488729018e+02 2.470871103831482429e+01
5.548486766488729245e+02 2.483162668000393580e+01
5.549486766488729472e+02 2.495504279408957515e+01
5.550486766488728563e+02 2.507903527823788892e+01
5.551486766488728790e+02 2.520371331071659426e+01
5.552486766488729018e+02 2.532921582165456442e+01
5.553486766488729245e+02 2.545570738411873180e+01
5.554486766488729472e+02 2.558337357805416445e+01
5.555486766488728563e+02 2.571241589018145035e+01
5.556486766488728790e+02 2.584304622209985425e+01
5.557486766488729018e+02 2.597548108693654711e+01
5.558486766488729245e+02 2.610993558177094087e+01
5.559486766488729472e+02 2.624661722862132152e+01
5.560486766488728563e+02 2.638571978091298931e+01
5.561486766488728790e+02 2.652741709496769218e+01
5.562486766488729018e+02 2.667185716710528354e+01
5.563486766488729245e+02 2.681915643639124625e+01
5.564486766488729472e+02 2.696939445087374310e+01
5.565486766488728563e+02 2.712260899133604397e+01
5.566486766488728790e+02 2.727879174116026917e+01
5.567486766488729018e+02 2.743788458390285712e+01
5.568486766488729245e+02 2.759977660168339142e+01
5.569486766488729472e+02 2.776430183757882730e+01
5.570486766488728563e+02 2.793123787400846325e+01
5.571486766488728790e+02 2.810030526673469353e+01
5.572486766488729018e+02 2.827116786075931643e+01
5.573486766488729245e+02 2.844343400026144053e+01
5.574486766488729472e+02 2.861665863002350818e+01

5.575486766488728563e+02 2.879034627077149722e+01
5.576486766488728790e+02 2.896395483578148600e+01
5.577486766488729018e+02 2.913690024125931544e+01
5.578486766488729245e+02 2.930856174867697206e+01
5.579486766488729472e+02 2.947828796374617610e+01
5.580486766488728563e+02 2.964540340432058230e+01
5.581486766488728790e+02 2.980921553852883576e+01
5.582486766488729018e+02 2.996902218511061022e+01
5.583486766488729245e+02 3.012411916050201910e+01
5.584486766488729472e+02 3.027380805188670365e+01
5.585486766488728563e+02 3.041740399235967374e+01
5.586486766488728790e+02 3.055424331364698887e+01
5.587486766488729018e+02 3.068369095353934739e+01
5.588486766488729245e+02 3.080514749932812535e+01
5.589486766488729472e+02 3.091805575501009784e+01
5.590486766488728563e+02 3.102190672873008737e+01
5.591486766488728790e+02 3.111624494767234950e+01
5.592486766488729018e+02 3.120067302015976551e+01
5.593486766488729245e+02 3.127485537878529342e+01
5.594486766488729472e+02 3.133852115366700986e+01
5.595486766488728563e+02 3.139146614102768140e+01
5.596486766488728790e+02 3.143355384888614168e+01
5.597486766488729018e+02 3.146471561832997210e+01
5.598486766488729245e+02 3.148494983524405555e+01
5.599486766488729472e+02 3.149432026314037003e+01
5.600486766488728563e+02 3.149295354253879253e+01
5.601486766488728790e+02 3.148103591589416794e+01
5.602486766488729018e+02 3.145880924909958054e+01
5.603486766488729245e+02 3.142656643092240643e+01
5.604486766488729472e+02 3.138464624020363303e+01
5.605486766488728563e+02 3.133342777718165095e+01
5.606486766488728790e+02 3.127332455985881055e+01
5.607486766488729018e+02 3.120477838892826838e+01
5.608486766488729245e+02 3.112825308548603687e+01
5.609486766488729472e+02 3.104422820467139132e+01
5.610486766488728563e+02 3.095319282564466334e+01
5.611486766488728790e+02 3.085563951407843319e+01
5.612486766488729018e+02 3.075205854777960468e+01
5.613486766488729245e+02 3.064293248934144742e+01
5.614486766488729472e+02 3.052873118202420244e+01
5.615486766488728563e+02 3.040990723652662808e+01
5.616486766488728790e+02 3.028689206709039539e+01
5.617486766488729018e+02 3.016009252559259579e+01
5.618486766488729245e+02 3.002988817203852534e+01
5.619486766488729472e+02 2.989662920925596268e+01
5.620486766488728563e+02 2.976063509869338120e+01

5.621486766488728790e+02 2.962219386311044644e+01
5.622486766488729018e+02 2.948156207069207468e+01
5.623486766488729245e+02 2.933896548379961899e+01
5.624486766488729472e+02 2.919460034428935558e+01
5.625486766488728563e+02 2.904863525619747477e+01
5.626486766488728790e+02 2.890121361575305059e+01
5.627486766488729018e+02 2.875245652830947662e+01
5.628486766488729245e+02 2.860246614207640903e+01
5.629486766488729472e+02 2.845132931971568269e+01
5.630486766488728563e+02 2.829912156117841349e+01
5.631486766488728790e+02 2.814591108486215632e+01
5.632486766488729018e+02 2.799176296951365828e+01
5.633486766488729245e+02 2.783674325653682757e+01
5.634486766488729472e+02 2.768092291170621877e+01
5.635486766488728563e+02 2.752438154691051153e+01
5.636486766488728790e+02 2.736721080658221439e+01
5.637486766488729018e+02 2.720951732996611838e+01
5.638486766488729245e+02 2.705142520932226802e+01
5.639486766488729472e+02 2.689307787544389328e+01
5.640486766488728563e+02 2.673463935531315627e+01
5.641486766488728790e+02 2.657629486203519775e+01
5.642486766488729018e+02 2.641825069403348181e+01
5.643486766488729245e+02 2.626073343842263341e+01
5.644486766488729472e+02 2.610398849201128968e+01
5.645486766488728563e+02 2.594827793199346644e+01
5.646486766488728790e+02 2.579387778650564300e+01
5.647486766488729018e+02 2.564107477229321219e+01
5.648486766488729245e+02 2.549016258220226661e+01
5.649486766488729472e+02 2.534143781858260525e+01
5.650486766488728563e+02 2.519519567950626282e+01
5.651486766488728790e+02 2.505172551260303138e+01
5.652486766488729018e+02 2.491130635600755383e+01
5.653486766488729245e+02 2.477420258722588642e+01
5.654486766488729472e+02 2.464065979859261546e+01
5.655486766488728563e+02 2.451090101245004149e+01
5.656486766488728790e+02 2.438512334039279494e+01
5.657486766488729018e+02 2.426349517914659160e+01
5.658486766488729245e+02 2.414615402124634969e+01
5.659486766488729472e+02 2.403320494208401925e+01
5.660486766488728563e+02 2.392471980661775888e+01
5.661486766488728790e+02 2.382073721962237300e+01
5.662486766488729018e+02 2.372126322340039906e+01
5.663486766488729245e+02 2.362627272695275593e+01
5.664486766488729472e+02 2.353571163130667543e+01
5.665486766488728563e+02 2.344949959756747404e+01
5.666486766488728790e+02 2.336753338780107470e+01

5.667486766488729018e+02 2.328969069450793228e+01
5.668486766488729245e+02 2.321583436258270439e+01
5.669486766488729472e+02 2.314581689855224766e+01
5.670486766488728563e+02 2.307948515574085846e+01
5.671486766488728790e+02 2.301668508092770793e+01
5.672486766488729018e+02 2.295726640804600294e+01
5.673486766488729245e+02 2.290108718744173188e+01
5.674486766488729472e+02 2.284801804499986133e+01
5.675486766488728563e+02 2.279794607380660665e+01
5.676486766488728790e+02 2.275077827164244937e+01
5.677486766488729018e+02 2.270644445012087687e+01
5.678486766488729245e+02 2.266489955529416633e+01
5.679486766488729472e+02 2.262612535460080210e+01
5.680486766488728563e+02 2.259013146067586675e+01
5.681486766488728790e+02 2.255695567833364734e+01
5.682486766488729018e+02 2.252666367651899293e+01
5.683486766488729245e+02 2.249934800180087180e+01
5.684486766488729472e+02 2.247512646367337652e+01
5.685486766488728563e+02 2.245413993421283294e+01
5.686486766488728790e+02 2.243654961525149361e+01
5.687486766488729018e+02 2.242253383496849040e+01
5.688486766488729245e+02 2.241228444253884078e+01
5.689486766488729472e+02 2.240600287416461711e+01
5.690486766488728563e+02 2.240389596645272263e+01
5.691486766488728790e+02 2.240617159378456336e+01
5.692486766488729018e+02 2.241303420518899259e+01
5.693486766488729245e+02 2.242468033348264811e+01
5.694486766488729472e+02 2.244129414532646294e+01
5.695486766488728563e+02 2.246304309564219892e+01
5.696486766488728790e+02 2.249007374384160585e+01
5.697486766488729018e+02 2.252250778284812327e+01
5.698486766488729245e+02 2.256043832524286330e+01
5.699486766488729472e+02 2.260392648432418383e+01
5.700486766488728563e+02 2.265299828168840435e+01
5.701486766488728790e+02 2.270764190732737831e+01
5.702486766488729018e+02 2.276780535335893418e+01
5.703486766488729245e+02 2.283339443846116978e+01
5.704486766488729472e+02 2.290427123691499034e+01
5.705486766488728563e+02 2.298025292385331397e+01
5.706486766488728790e+02 2.306111104679064994e+01
5.707486766488729018e+02 2.314657123263386751e+01
5.708486766488729245e+02 2.323631333897227336e+01
5.709486766488729472e+02 2.332997205829921938e+01
5.710486766488728563e+02 2.342713798368595235e+01
5.711486766488728790e+02 2.352735914405959505e+01
5.712486766488729018e+02 2.363014301638139614e+01

5.713486766488729245e+02 2.373495902044407302e+01
5.714486766488729472e+02 2.384124149950563520e+01
5.715486766488728563e+02 2.394839318639100156e+01
5.716486766488728790e+02 2.405578914991496475e+01
5.717486766488729018e+02 2.416278121046480010e+01
5.718486766488729245e+02 2.426870280635265686e+01
5.719486766488729472e+02 2.437287428419870494e+01
5.720486766488728563e+02 2.447460857730006012e+01
5.721486766488728790e+02 2.457321722590841873e+01
5.722486766488729018e+02 2.466801668286997540e+01
5.723486766488729245e+02 2.475833483751551256e+01
5.724486766488729472e+02 2.484351768040371056e+01
5.725486766488728563e+02 2.492293602191765700e+01
5.726486766488728790e+02 2.499599216920341505e+01
5.727486766488729018e+02 2.506212645891820756e+01
5.728486766488729245e+02 2.512082353810186319e+01
5.729486766488729472e+02 2.517161828252734779e+01
5.730486766488728563e+02 2.521410124140293618e+01
5.731486766488728790e+02 2.524792349949314740e+01
5.732486766488729018e+02 2.527280085272224142e+01
5.733486766488729245e+02 2.528851720115670787e+01
5.734486766488729472e+02 2.529492707387337447e+01
5.735486766488728563e+02 2.529195721345121584e+01
5.736486766488728790e+02 2.527960716342891345e+01
5.737486766488729018e+02 2.525794881971318517e+01
5.738486766488729245e+02 2.522712492618703806e+01
5.739486766488729472e+02 2.518734651517585732e+01
5.740486766488728563e+02 2.513888931444767394e+01
5.741486766488728790e+02 2.508208916348857542e+01
5.742486766488729018e+02 2.501733650232275963e+01
5.743486766488729245e+02 2.494507001556109671e+01
5.744486766488729472e+02 2.486576953210963836e+01
5.745486766488728563e+02 2.477994829653740538e+01
5.746486766488728790e+02 2.468814474104102530e+01
5.747486766488729018e+02 2.459091389687872109e+01
5.748486766488729245e+02 2.448881859079210699e+01
5.749486766488729472e+02 2.438242057510895933e+01
5.750486766488728563e+02 2.427227173984806186e+01
5.751486766488728790e+02 2.415890555126289740e+01
5.752486766488729018e+02 2.404282885401180891e+01
5.753486766488729245e+02 2.392451416377988949e+01
5.754486766488729472e+02 2.380439256405592374e+01
5.755486766488728563e+02 2.368284730532080218e+01
5.756486766488728790e+02 2.356020818764591240e+01
5.757486766488729018e+02 2.343674678919324350e+01
5.758486766488729245e+02 2.331267258395379116e+01

5.759486766488729472e+02 2.318812997287143673e+01
5.760486766488728563e+02 2.306319623388009177e+01
5.761486766488728790e+02 2.293788037890839959e+01
5.762486766488729018e+02 2.281212289010424499e+01
5.763486766488729245e+02 2.268579629385203589e+01
5.764486766488729472e+02 2.255870651996755427e+01
5.765486766488728563e+02 2.243059498501958871e+01
5.766486766488728790e+02 2.230114133319603198e+01
5.767486766488729018e+02 2.216996676553394607e+01
5.768486766488729245e+02 2.203663788857706507e+01
5.769486766488729472e+02 2.190067101639829517e+01
5.770486766488728563e+02 2.176153686510384233e+01
5.771486766488728790e+02 2.161866558599483312e+01
5.772486766488729018e+02 2.147145209199228333e+01
5.773486766488729245e+02 2.131926164115532885e+01
5.774486766488729472e+02 2.116143565052917808e+01
5.775486766488728563e+02 2.099729772251514248e+01
5.776486766488728790e+02 2.082615987384673772e+01
5.777486766488729018e+02 2.064732896350686886e+01
5.778486766488729245e+02 2.046011332002586869e+01
5.779486766488729472e+02 2.026382957014972419e+01
5.780486766488728563e+02 2.005780966956696432e+01
5.781486766488728790e+02 1.984140813207828558e+01
5.782486766488729018e+02 1.961400944627674647e+01
5.783486766488729245e+02 1.937503565863065447e+01
5.784486766488729472e+02 1.912395408913577910e+01
5.785486766488728563e+02 1.886028513088711378e+01
5.786486766488728790e+02 1.858361006861420961e+01
5.787486766488729018e+02 1.829357883414128949e+01
5.788486766488729245e+02 1.798991759968121684e+01
5.789486766488729472e+02 1.767243609371468338e+01
5.790486766488728563e+02 1.734103450982687278e+01
5.791486766488728790e+02 1.699570986714298471e+01
5.792486766488729018e+02 1.663656167272922914e+01
5.793486766488729245e+02 1.626379673222131572e+01
5.794486766488729472e+02 1.587773295558799092e+01
5.795486766488728563e+02 1.547880201074436179e+01
5.796486766488728790e+02 1.506755068892493199e+01
5.797486766488729018e+02 1.464464086231914841e+01
5.798486766488729245e+02 1.421084793625887954e+01
5.799486766488729472e+02 1.376705772480324796e+01
5.800486766488728563e+02 1.331426170925486829e+01
5.801486766488728790e+02 1.285355067314258370e+01
5.802486766488729018e+02 1.238610674352852570e+01
5.803486766488729245e+02 1.191319390603183592e+01
5.804486766488729472e+02 1.143614709850979594e+01

5.805486766488728563e+02 1.095636002466262404e+01
5.806486766488728790e+02 1.047527186271034161e+01

TS1 O

5.258348381006741192e+02 6.033207755685857990e-12
5.259348381006741420e+02 2.199078131645543196e-11
5.260348381006741647e+02 6.992276566626287617e-11
5.261348381006740738e+02 2.058946851193887446e-10
5.262348381006740965e+02 5.869037804303260263e-10
5.263348381006741192e+02 1.653601385527889321e-09
5.264348381006741420e+02 4.619020765223930650e-09
5.265348381006741647e+02 1.271979089981018382e-08
5.266348381006740738e+02 3.430048271029068544e-08
5.267348381006740965e+02 9.034988174048610567e-08
5.268348381006741192e+02 2.334805125460492670e-07
5.269348381006741420e+02 5.981048904180110697e-07
5.270348381006741647e+02 1.538078833754833961e-06
5.271348381006740738e+02 4.009155772521283297e-06
5.272348381006740965e+02 1.062603795243627111e-05
5.273348381006741192e+02 2.854114570255398176e-05
5.274348381006741420e+02 7.711594311477423390e-05
5.275348381006741647e+02 2.078161570068763218e-04
5.276348381006740738e+02 5.545529017258980916e-04
5.277348381006740965e+02 1.459323786021373640e-03
5.278348381006741192e+02 3.784752103333005081e-03
5.279348381006741420e+02 9.692339052384988177e-03
5.280348381006741647e+02 2.458527987852340141e-02
5.281348381006740738e+02 6.197599665534708063e-02
5.282348381006740965e+02 1.557147324300537650e-01
5.283348381006741192e+02 3.906967873448067841e-01
5.284348381006741420e+02 9.792119531337515337e-01
5.285348381006741647e+02 2.441764734812579274e+00
5.286348381006740738e+02 5.959781541231503610e+00
5.287348381006740965e+02 1.362259120852518990e+01
5.288348381006741192e+02 2.691772947545276651e+01
5.289348381006741420e+02 4.280631230550027055e+01
5.290348381006741647e+02 5.550547483202569765e+01
5.291348381006740738e+02 6.350048393866876495e+01
5.292348381006740965e+02 6.866974420652698541e+01
5.293348381006741192e+02 7.274282857506420896e+01
5.294348381006741420e+02 7.652049690024833239e+01
5.295348381006741647e+02 8.019888896001432954e+01
5.296348381006740738e+02 8.369476686442709479e+01
5.297348381006740965e+02 8.686453704758267236e+01
5.298348381006741192e+02 8.961165023691137321e+01
5.299348381006741420e+02 9.182018848724128190e+01

5.300348381006741647e+02 9.318711417819514509e+01
5.301348381006740738e+02 9.319450104027694692e+01
5.302348381006740965e+02 9.134790137438164948e+01
5.303348381006741192e+02 8.752085419598742533e+01
5.304348381006741420e+02 8.215651008589109949e+01
5.305348381006741647e+02 7.617658742821798512e+01
5.306348381006740738e+02 7.049286684403672609e+01
5.307348381006740965e+02 6.531943143794407547e+01
5.308348381006741192e+02 6.015770833693154884e+01
5.309348381006741420e+02 5.477849258878002559e+01
5.310348381006741647e+02 4.976379876467589725e+01
5.311348381006740738e+02 4.576292121709363414e+01
5.312348381006740965e+02 4.282709859288762289e+01
5.313348381006741192e+02 4.065738787063298787e+01
5.314348381006741420e+02 3.900746801593297164e+01
5.315348381006741647e+02 3.775799635407531696e+01
5.316348381006740738e+02 3.685661977589737148e+01
5.317348381006740965e+02 3.628099452864797314e+01
5.318348381006741192e+02 3.602015431379521715e+01
5.319348381006741420e+02 3.605605144174259635e+01
5.320348381006741647e+02 3.634894997869649558e+01
5.321348381006740738e+02 3.683442115544632856e+01
5.322348381006740965e+02 3.743323906577121107e+01
5.323348381006741192e+02 3.806866464848210541e+01
5.324348381006741420e+02 3.868295866835310903e+01
5.325348381006741647e+02 3.924681534349813461e+01
5.326348381006740738e+02 3.975961908451673565e+01
5.327348381006740965e+02 4.024237635687340742e+01
5.328348381006741192e+02 4.072722963713138711e+01
5.329348381006741420e+02 4.124739173461222208e+01
5.330348381006741647e+02 4.182990469149184776e+01
5.331348381006740738e+02 4.249187227442030235e+01
5.332348381006740965e+02 4.323952229696279659e+01
5.333348381006741192e+02 4.406892849044502469e+01
5.334348381006741420e+02 4.496734987284529694e+01
5.335348381006741647e+02 4.591460732703517067e+01
5.336348381006740738e+02 4.688438854963299462e+01
5.337348381006740965e+02 4.784565336617344400e+01
5.338348381006741192e+02 4.876435366293209484e+01
5.339348381006741420e+02 4.960555018510872571e+01
5.340348381006741647e+02 5.033581295736740913e+01
5.341348381006740738e+02 5.092563318637752445e+01
5.342348381006740965e+02 5.135150991515761376e+01
5.343348381006741192e+02 5.159741406560939225e+01
5.344348381006741420e+02 5.165544934498260687e+01
5.345348381006741647e+02 5.152568013115773482e+01

5.346348381006740738e+02 5.121523761579782530e+01
5.347348381006740965e+02 5.073691596751781674e+01
5.348348381006741192e+02 5.010751564153588333e+01
5.349348381006741420e+02 4.934618252050712073e+01
5.350348381006741647e+02 4.847294189838891754e+01
5.351348381006740738e+02 4.750755353931656089e+01
5.352348381006740965e+02 4.646873658429414178e+01
5.353348381006741192e+02 4.537374586855828795e+01
5.354348381006741420e+02 4.423823365307603694e+01
5.355348381006741647e+02 4.307630635444418488e+01
5.356348381006740738e+02 4.190068301263880812e+01
5.357348381006740965e+02 4.072287592954160118e+01
5.358348381006741192e+02 3.955333745258582923e+01
5.359348381006741420e+02 3.840154356692946891e+01
5.360348381006741647e+02 3.727600929706452604e+01
5.361348381006740738e+02 3.618424927404561942e+01
5.362348381006740965e+02 3.513270758135152505e+01
5.363348381006741192e+02 3.412668428888426320e+01
5.364348381006741420e+02 3.317028330837136707e+01
5.365348381006741647e+02 3.226639940480020385e+01
5.366348381006740738e+02 3.141675355350302468e+01
5.367348381006740965e+02 3.062197723891909362e+01
5.368348381006741192e+02 2.988173913081944733e+01
5.369348381006741420e+02 2.919490263350107284e+01
5.370348381006741647e+02 2.855970031827417444e+01
5.371348381006740738e+02 2.797391102414093922e+01
5.372348381006740965e+02 2.743502697325826034e+01
5.373348381006741192e+02 2.694040099625159712e+01
5.374348381006741420e+02 2.648736729259113787e+01
5.375348381006741647e+02 2.607333253866784517e+01
5.376348381006740738e+02 2.569583720454663478e+01
5.377348381006740965e+02 2.535258939592138105e+01
5.378348381006741192e+02 2.504147528031119663e+01
5.379348381006741420e+02 2.476055117548050788e+01
5.380348381006741647e+02 2.450802274242480294e+01
5.381348381006740738e+02 2.428221655310821703e+01
5.382348381006740965e+02 2.408154873490030212e+01
5.383348381006741192e+02 2.390449457118291576e+01
5.384348381006741420e+02 2.374956198954137676e+01
5.385348381006741647e+02 2.361527090208685919e+01
5.386348381006740738e+02 2.350013945787225467e+01
5.387348381006740965e+02 2.340267748037786433e+01
5.388348381006741192e+02 2.332138672556612491e+01
5.389348381006741420e+02 2.325476712034249971e+01
5.390348381006741647e+02 2.320132782450262354e+01
5.391348381006740738e+02 2.315960178762601629e+01

5.392348381006740965e+02 2.312816242525505928e+01
5.393348381006741192e+02 2.310564109188703341e+01
5.394348381006741420e+02 2.309074415673780578e+01
5.395348381006741647e+02 2.308226866789413378e+01
5.396348381006740738e+02 2.307911579973916361e+01
5.397348381006740965e+02 2.308030149897615146e+01
5.398348381006741192e+02 2.308496396130449924e+01
5.399348381006741420e+02 2.309236777251846462e+01
5.400348381006741647e+02 2.310190472659391503e+01
5.401348381006740738e+02 2.311309148430936844e+01
5.402348381006740965e+02 2.312556435679578470e+01
5.403348381006741192e+02 2.313907158887967341e+01
5.404348381006741420e+02 2.315346357850174641e+01
5.405348381006741647e+02 2.316868150330453702e+01
5.406348381006740738e+02 2.318474483682598475e+01
5.407348381006740965e+02 2.320173822811503328e+01
5.408348381006741192e+02 2.321979819358779196e+01
5.409348381006741420e+02 2.323910003204299102e+01
5.410348381006741647e+02 2.325984532619277445e+01
5.411348381006740738e+02 2.328225033975798652e+01
5.412348381006740965e+02 2.330653556070625854e+01
5.413348381006741192e+02 2.333291658081957110e+01
5.414348381006741420e+02 2.336159644139978298e+01
5.415348381006741647e+02 2.339275951620966509e+01
5.416348381006740738e+02 2.342656694712947285e+01
5.417348381006740965e+02 2.346315359668595590e+01
5.418348381006741192e+02 2.350262643561174514e+01
5.419348381006741420e+02 2.354506424375527374e+01
5.420348381006741647e+02 2.359051846965502719e+01
5.421348381006740738e+02 2.363901506839636113e+01
5.422348381006740965e+02 2.369055711927474306e+01
5.423348381006741192e+02 2.374512801437903775e+01
5.424348381006741420e+02 2.380269500635952085e+01
5.425348381006741647e+02 2.386321290801667061e+01
5.426348381006740738e+02 2.392662774740528420e+01
5.427348381006740965e+02 2.399288019916181014e+01
5.428348381006741192e+02 2.406190863484973619e+01
5.429348381006741420e+02 2.413365166125969097e+01
5.430348381006741647e+02 2.420805004469934474e+01
5.431348381006740738e+02 2.428504795020985441e+01
5.432348381006740965e+02 2.436459345620520978e+01
5.433348381006741192e+02 2.444663833613892479e+01
5.434348381006741420e+02 2.453113712842884553e+01
5.435348381006741647e+02 2.461804554310735682e+01
5.436348381006740738e+02 2.470731827773167311e+01
5.437348381006740965e+02 2.479890633538151690e+01

5.438348381006741192e+02 2.489275395364011700e+01
5.439348381006741420e+02 2.498879526503466053e+01
5.440348381006741647e+02 2.508695081640155777e+01
5.441348381006740738e+02 2.518712407709621814e+01
5.442348381006740965e+02 2.528919806408897131e+01
5.443348381006741192e+02 2.539303220609648903e+01
5.444348381006741420e+02 2.549845955941692566e+01
5.445348381006741647e+02 2.560528447556628606e+01
5.446348381006740738e+02 2.571328080570973995e+01
5.447348381006740965e+02 2.582219070983234843e+01
5.448348381006741192e+02 2.593172412020458495e+01
5.449348381006741420e+02 2.604155888956291065e+01
5.450348381006741647e+02 2.615134163512826504e+01
5.451348381006740738e+02 2.626068927066531700e+01
5.452348381006740965e+02 2.636919120074908562e+01
5.453348381006741192e+02 2.647641213470051724e+01
5.454348381006741420e+02 2.658189546266957137e+01
5.455348381006741647e+02 2.668516712341112651e+01
5.456348381006740738e+02 2.678573988267411465e+01
5.457348381006740965e+02 2.688311793299757468e+01
5.458348381006741192e+02 2.697680172019378020e+01
5.459348381006741420e+02 2.706629289894831913e+01
5.460348381006741647e+02 2.715109931974720325e+01
5.461348381006740738e+02 2.723073995166398831e+01
5.462348381006740965e+02 2.730474965023724110e+01
5.463348381006741192e+02 2.737268368652304673e+01
5.464348381006741420e+02 2.743412196213755294e+01
5.465348381006741647e+02 2.748867284538957279e+01
5.466348381006740738e+02 2.753597657507902241e+01
5.467348381006740965e+02 2.757570819081966818e+01
5.468348381006741192e+02 2.760757996143154713e+01
5.469348381006741420e+02 2.763134329563924751e+01
5.470348381006741647e+02 2.764679013162424326e+01
5.471348381006740738e+02 2.765375381354601103e+01
5.472348381006740965e+02 2.765210947365552130e+01
5.473348381006741192e+02 2.764177394780153207e+01
5.474348381006741420e+02 2.762270525977116264e+01
5.475348381006741647e+02 2.759490171586850238e+01
5.476348381006740738e+02 2.755840065535116423e+01
5.477348381006740965e+02 2.751327690481685551e+01
5.478348381006741192e+02 2.745964098543548459e+01
5.479348381006741420e+02 2.739763712119174244e+01
5.480348381006741647e+02 2.732744109423235557e+01
5.481348381006740738e+02 2.724925799023754536e+01
5.482348381006740965e+02 2.716331987272491943e+01
5.483348381006741192e+02 2.706988342062809494e+01

5.484348381006741420e+02 2.696922755865771393e+01
5.485348381006741647e+02 2.686165110511930720e+01
5.486348381006740738e+02 2.674747045727357175e+01
5.487348381006740965e+02 2.662701733018583639e+01
5.488348381006741192e+02 2.650063656148059366e+01
5.489348381006741420e+02 2.636868399159246934e+01
5.490348381006741647e+02 2.623152442703985088e+01
5.491348381006740738e+02 2.608952969292294455e+01
5.492348381006740965e+02 2.594307678020750885e+01
5.493348381006741192e+02 2.579254609328588188e+01
5.494348381006741420e+02 2.563831980366435914e+01
5.495348381006741647e+02 2.548078031623929007e+01
5.496348381006740738e+02 2.532030885531032993e+01
5.497348381006740965e+02 2.515728417805298989e+01
5.498348381006741192e+02 2.499208142346616768e+01
5.499348381006741420e+02 2.482507110467138389e+01
5.500348381006741647e+02 2.465661825175939015e+01
5.501348381006740738e+02 2.448708171107914211e+01
5.502348381006740965e+02 2.431681360491537802e+01
5.503348381006741192e+02 2.414615895292061509e+01
5.504348381006741420e+02 2.397545545351687224e+01
5.505348381006741647e+02 2.380503341986265298e+01
5.506348381006740738e+02 2.363521586102930172e+01
5.507348381006740965e+02 2.346631869490813926e+01
5.508348381006741192e+02 2.329865107525687762e+01
5.509348381006741420e+02 2.313251581137133428e+01
5.510348381006741647e+02 2.296820985532096770e+01
5.511348381006740738e+02 2.280602482867740832e+01
5.512348381006740965e+02 2.264624755834025649e+01
5.513348381006741192e+02 2.248916058953919617e+01
5.514348381006741420e+02 2.233504264344649926e+01
5.515348381006741647e+02 2.218416898711736351e+01
5.516348381006740738e+02 2.203681168469347895e+01
5.517348381006740965e+02 2.189323970093440863e+01
5.518348381006741192e+02 2.175371883112218541e+01
5.519348381006741420e+02 2.161851143513473872e+01
5.520348381006741647e+02 2.148787595789742966e+01
5.521348381006740738e+02 2.136206622338112737e+01
5.522348381006740965e+02 2.124133049469112677e+01
5.523348381006741192e+02 2.112591029845730617e+01
5.524348381006741420e+02 2.101603901756374171e+01
5.525348381006741647e+02 2.091194026212775725e+01
5.526348381006740738e+02 2.081382603444472679e+01
5.527348381006740965e+02 2.072189470925592047e+01
5.528348381006741192e+02 2.063632885608519274e+01
5.529348381006741420e+02 2.055729293544692382e+01

5.530348381006741647e+02 2.048493090537986205e+01
5.531348381006740738e+02 2.041936377894238674e+01
5.532348381006740965e+02 2.036068717694818275e+01
5.533348381006741192e+02 2.030896892325887393e+01
5.534348381006741420e+02 2.026424673231336726e+01
5.535348381006741647e+02 2.022652604018669464e+01
5.536348381006740738e+02 2.019577803125705273e+01
5.537348381006740965e+02 2.017193791244017120e+01
5.538348381006741192e+02 2.015490348584495450e+01
5.539348381006741420e+02 2.014453406854382322e+01
5.540348381006741647e+02 2.014064980487433942e+01
5.541348381006740738e+02 2.014303141225254379e+01
5.542348381006740965e+02 2.015142039586746847e+01
5.543348381006741192e+02 2.016551976085180087e+01
5.544348381006741420e+02 2.018499524263857836e+01
5.545348381006741647e+02 2.020947706731000082e+01
5.546348381006740738e+02 2.023856224395854042e+01
5.547348381006740965e+02 2.027181738059703164e+01
5.548348381006741192e+02 2.030878200419785884e+01
5.549348381006741420e+02 2.034897235428123707e+01
5.550348381006741647e+02 2.039188560840607423e+01
5.551348381006740738e+02 2.043700448727029340e+01
5.552348381006740965e+02 2.048380217723642005e+01
5.553348381006741192e+02 2.053174749930120413e+01
5.554348381006741420e+02 2.058031024614644267e+01
5.555348381006741647e+02 2.062896660323822928e+01
5.556348381006740738e+02 2.067720456623533920e+01
5.557348381006740965e+02 2.072452926541874163e+01
5.558348381006741192e+02 2.077046810859634718e+01
5.559348381006741420e+02 2.081457565701688139e+01
5.560348381006741647e+02 2.085643815422121961e+01
5.561348381006740738e+02 2.089567763534832068e+01
5.562348381006740965e+02 2.093195555400212271e+01
5.563348381006741192e+02 2.096497587509686156e+01
5.564348381006741420e+02 2.099448759478424265e+01
5.565348381006741647e+02 2.102028666222343034e+01
5.566348381006740738e+02 2.104221729213438508e+01
5.567348381006740965e+02 2.106017267130530612e+01
5.568348381006741192e+02 2.107409507602454468e+01
5.569348381006741420e+02 2.108397543031049182e+01
5.570348381006741647e+02 2.108985234638461748e+01
5.571348381006740738e+02 2.109181069868948910e+01
5.572348381006740965e+02 2.108997979057877004e+01
5.573348381006741192e+02 2.108453117836241120e+01
5.574348381006741420e+02 2.107567622053371537e+01
5.575348381006741647e+02 2.106366342068408670e+01

5.576348381006740738e+02 2.104877563087781667e+01
5.577348381006740965e+02 2.103132717825616282e+01
5.578348381006741192e+02 2.101166097160430368e+01
5.579348381006741420e+02 2.099014563685716439e+01
5.580348381006741647e+02 2.096717272141963306e+01
5.581348381006740738e+02 2.094315399715851456e+01
5.582348381006740965e+02 2.091851888143906280e+01
5.583348381006741192e+02 2.089371198509445549e+01
5.584348381006741420e+02 2.086919078617817291e+01
5.585348381006741647e+02 2.084542341918154662e+01
5.586348381006740738e+02 2.082288656147128592e+01
5.587348381006740965e+02 2.080206339232352164e+01
5.588348381006741192e+02 2.078344159533667224e+01
5.589348381006741420e+02 2.076751137234161959e+01
5.590348381006741647e+02 2.075476343626020537e+01
5.591348381006740738e+02 2.074568695166004773e+01
5.592348381006740965e+02 2.074076739490721621e+01
5.593348381006741192e+02 2.074048431063675579e+01
5.594348381006741420e+02 2.074530894748982135e+01
5.595348381006741647e+02 2.075570176339458328e+01
5.596348381006740738e+02 2.077210979874954688e+01
5.597348381006740965e+02 2.079496392433268426e+01
5.598348381006741192e+02 2.082467597923359293e+01
5.599348381006741420e+02 2.086163582222815904e+01
5.600348381006741647e+02 2.090620832744765067e+01
5.601348381006740738e+02 2.095873036164665848e+01
5.602348381006740965e+02 2.101950778559981359e+01
5.603348381006741192e+02 2.108881252597588940e+01
5.604348381006741420e+02 2.116687976632997703e+01
5.605348381006741647e+02 2.125390530657029586e+01
5.606348381006740738e+02 2.135004313940980936e+01
5.607348381006740965e+02 2.145540328998167112e+01
5.608348381006741192e+02 2.157004996111175643e+01
5.609348381006741420e+02 2.169400002188003285e+01
5.610348381006741647e+02 2.182722187127637170e+01
5.611348381006740738e+02 2.196963470220378412e+01
5.612348381006740965e+02 2.212110818404892498e+01
5.613348381006741192e+02 2.228146257477743930e+01
5.614348381006741420e+02 2.245046926625458639e+01
5.615348381006741647e+02 2.262785175945924010e+01
5.616348381006740738e+02 2.281328705963682779e+01
5.617348381006740965e+02 2.300640747538036379e+01
5.618348381006741192e+02 2.320680280025154474e+01
5.619348381006741420e+02 2.341402285093025881e+01
5.620348381006741647e+02 2.362758033204899633e+01
5.621348381006740738e+02 2.384695399482328781e+01

5.622348381006740965e+02 2.407159205430043514e+01
5.623348381006741192e+02 2.430091582845493647e+01
5.624348381006741420e+02 2.453432356137994574e+01
5.625348381006741647e+02 2.477119439237090504e+01
5.626348381006740738e+02 2.501089243267119144e+01
5.627348381006740965e+02 2.525277091195723855e+01
5.628348381006741192e+02 2.549617635720018782e+01
5.629348381006741420e+02 2.574045276727503762e+01
5.630348381006741647e+02 2.598494574755232378e+01
5.631348381006740738e+02 2.622900656965968480e+01
5.632348381006740965e+02 2.647199612263694846e+01
5.633348381006741192e+02 2.671328872282974842e+01
5.634348381006741420e+02 2.695227575110416751e+01
5.635348381006741647e+02 2.718836908735232782e+01
5.636348381006740738e+02 2.742100431385019732e+01
5.637348381006740965e+02 2.764964366086918091e+01
5.638348381006741192e+02 2.787377867009121601e+01
5.639348381006741420e+02 2.809293255386915433e+01
5.640348381006741647e+02 2.830666223124737968e+01
5.641348381006740738e+02 2.851456002492241026e+01
5.642348381006740965e+02 2.871625500697995648e+01
5.643348381006741192e+02 2.891141398526370310e+01
5.644348381006741420e+02 2.909974212656658210e+01
5.645348381006741647e+02 2.928098321741745735e+01
5.646348381006740738e+02 2.945491956797607003e+01
5.647348381006740965e+02 2.962137156934399940e+01
5.648348381006741192e+02 2.978019691932831137e+01
5.649348381006741420e+02 2.993128953624174216e+01
5.650348381006741647e+02 3.007457818455495868e+01
5.651348381006740738e+02 3.021002484002097077e+01
5.652348381006740965e+02 3.033762282515014874e+01
5.653348381006741192e+02 3.045739474853773743e+01
5.654348381006741420e+02 3.056939028344940112e+01
5.655348381006741647e+02 3.067368382220653444e+01
5.656348381006740738e+02 3.077037204324437170e+01
5.657348381006740965e+02 3.085957142724546642e+01
5.658348381006741192e+02 3.094141575749357287e+01
5.659348381006741420e+02 3.101605363760361200e+01
5.660348381006741647e+02 3.108364605712753104e+01
5.661348381006740738e+02 3.114436403230908468e+01
5.662348381006740965e+02 3.119838634557097024e+01
5.663348381006741192e+02 3.124589740328884346e+01
5.664348381006741420e+02 3.128708522716986806e+01
5.665348381006741647e+02 3.132213959024319649e+01
5.666348381006740738e+02 3.135125030422700121e+01
5.667348381006740965e+02 3.137460566098341630e+01

5.668348381006741192e+02 3.139239102704102891e+01
5.669348381006741420e+02 3.140478758685562610e+01
5.670348381006741647e+02 3.141197122769177597e+01
5.671348381006740738e+02 3.141411155681066703e+01
5.672348381006740965e+02 3.141137104010178405e+01
5.673348381006741192e+02 3.140390425041902844e+01
5.674348381006741420e+02 3.139185721369327808e+01
5.675348381006741647e+02 3.137536684136380671e+01
5.676348381006740738e+02 3.135456043876802568e+01
5.677348381006740965e+02 3.132955528078489493e+01
5.678348381006741192e+02 3.130045824815712052e+01
5.679348381006741420e+02 3.126736552042019568e+01
5.680348381006741647e+02 3.123036232412339785e+01
5.681348381006740738e+02 3.118952273790814900e+01
5.682348381006740965e+02 3.114490955887980306e+01
5.683348381006741192e+02 3.109657423742513771e+01
5.684348381006741420e+02 3.104455689005594365e+01
5.685348381006741647e+02 3.098888640186882526e+01
5.686348381006740738e+02 3.092958063168083527e+01
5.687348381006740965e+02 3.086664673373508805e+01
5.688348381006741192e+02 3.080008160998374933e+01
5.689348381006741420e+02 3.072987250630048095e+01
5.690348381006741647e+02 3.065599776451842473e+01
5.691348381006740738e+02 3.057842773994516605e+01
5.692348381006740965e+02 3.049712589100217741e+01
5.693348381006741192e+02 3.041205004394906553e+01
5.694348381006741420e+02 3.032315383137500220e+01
5.695348381006741647e+02 3.023038829840145780e+01
5.696348381006740738e+02 3.013370366549093049e+01
5.697348381006740965e+02 3.003305123156441780e+01
5.698348381006741192e+02 2.992838539598005454e+01
5.699348381006741420e+02 2.981966577300391918e+01
5.700348381006741647e+02 2.970685936790209070e+01
5.701348381006740738e+02 2.958994277987812538e+01
5.702348381006740965e+02 2.946890439394224614e+01
5.703348381006741192e+02 2.934374652156561325e+01
5.704348381006741420e+02 2.921448744876545689e+01
5.705348381006741647e+02 2.908116335016387666e+01
5.706348381006740738e+02 2.894383002860875465e+01
5.707348381006740965e+02 2.880256444214641220e+01
5.708348381006741192e+02 2.865746598345353746e+01
5.709348381006741420e+02 2.850865748119373677e+01
5.710348381006741647e+02 2.835628589804806410e+01
5.711348381006740738e+02 2.820052270622480250e+01
5.712348381006740965e+02 2.804156392790734031e+01
5.713348381006741192e+02 2.787962983514189119e+01

5.714348381006741420e+02 2.771496431088532120e+01
5.715348381006741647e+02 2.754783388009886735e+01
5.716348381006740738e+02 2.737852642666253189e+01
5.717348381006740965e+02 2.720734961828331677e+01
5.718348381006741192e+02 2.703462906727921222e+01
5.719348381006741420e+02 2.686070625997046335e+01
5.720348381006741647e+02 2.668593629125818723e+01
5.721348381006740738e+02 2.651068544371740643e+01
5.722348381006740965e+02 2.633532865211264351e+01
5.723348381006741192e+02 2.616024689464109798e+01
5.724348381006741420e+02 2.598582455144488179e+01
5.725348381006741647e+02 2.581244676907321178e+01
5.726348381006740738e+02 2.564049686672097295e+01
5.727348381006740965e+02 2.547035381635812712e+01
5.728348381006741192e+02 2.530238982445593265e+01
5.729348381006741420e+02 2.513696803809449065e+01
5.730348381006741647e+02 2.497444039299507068e+01
5.731348381006740738e+02 2.481514561565771260e+01
5.732348381006740965e+02 2.465940738649238639e+01
5.733348381006741192e+02 2.450753266579121004e+01
5.734348381006741420e+02 2.435981017976088125e+01
5.735348381006741647e+02 2.421650905975336343e+01
5.736348381006740738e+02 2.407787762440595003e+01
5.737348381006740965e+02 2.394414229170145347e+01
5.738348381006741192e+02 2.381550660602339775e+01
5.739348381006741420e+02 2.369215036411605269e+01
5.740348381006741647e+02 2.357422882343571402e+01
5.741348381006740738e+02 2.346187197664332302e+01
5.742348381006740965e+02 2.335518387685813479e+01
5.743348381006741192e+02 2.325424199967016392e+01
5.744348381006741420e+02 2.315909662968306648e+01
5.745348381006741647e+02 2.306977026141487386e+01
5.746348381006740738e+02 2.298625700660325322e+01
5.747348381006740965e+02 2.290852200223924484e+01
5.748348381006741192e+02 2.283650081589028247e+01
5.749348381006741420e+02 2.277009884699399578e+01
5.750348381006741647e+02 2.270919072474977085e+01
5.751348381006740738e+02 2.265361970497164634e+01
5.752348381006740965e+02 2.260319706978432919e+01
5.753348381006741192e+02 2.255770153535535627e+01
5.754348381006741420e+02 2.251687867399846965e+01
5.755348381006741647e+02 2.248044035800601392e+01
5.756348381006740738e+02 2.244806423354247471e+01
5.757348381006740965e+02 2.241939323393214067e+01
5.758348381006741192e+02 2.239403514278309260e+01
5.759348381006741420e+02 2.237156221868452377e+01

5.760348381006741647e+02 2.235151089476534736e+01
5.761348381006740738e+02 2.233338156826340537e+01
5.762348381006740965e+02 2.231663849746000139e+01
5.763348381006741192e+02 2.230070982589478490e+01
5.764348381006741420e+02 2.228498775666780318e+01
5.765348381006741647e+02 2.226882890280777616e+01
5.766348381006740738e+02 2.225155484304846709e+01
5.767348381006740965e+02 2.223245291578602334e+01
5.768348381006741192e+02 2.221077728733256862e+01
5.769348381006741420e+02 2.218575033364622229e+01
5.770348381006741647e+02 2.215656437729206019e+01
5.771348381006740738e+02 2.212238382323531738e+01
5.772348381006740965e+02 2.208234773794196215e+01
5.773348381006741192e+02 2.203557291591051026e+01
5.774348381006741420e+02 2.198115747594021840e+01
5.775348381006741647e+02 2.191818502593091367e+01
5.776348381006740738e+02 2.184572942961636599e+01
5.777348381006740965e+02 2.176286020120949871e+01
5.778348381006741192e+02 2.166864854439349841e+01
5.779348381006741420e+02 2.156217404040667063e+01
5.780348381006741647e+02 2.144253197619904228e+01
5.781348381006740738e+02 2.130884128792997245e+01
5.782348381006740965e+02 2.116025307766739161e+01
5.783348381006741192e+02 2.099595964237361301e+01
5.784348381006741420e+02 2.081520393454720974e+01
5.785348381006741647e+02 2.061728935375016647e+01
5.786348381006740738e+02 2.040158974827622274e+01
5.787348381006740965e+02 2.016755948706612500e+01
5.788348381006741192e+02 1.991474344434674748e+01
5.789348381006741420e+02 1.964278672408472559e+01
5.790348381006741647e+02 1.935144393891683023e+01
5.791348381006740738e+02 1.904058784943055116e+01
5.792348381006740965e+02 1.871021716514030331e+01
5.793348381006741192e+02 1.836046330876302690e+01
5.794348381006741420e+02 1.799159595085037822e+01
5.795348381006741647e+02 1.760402713274383402e+01
5.796348381006740738e+02 1.719831381227768929e+01
5.797348381006740965e+02 1.677515868857700099e+01
5.798348381006741192e+02 1.633540918940052222e+01
5.799348381006741420e+02 1.588005453629088493e+01
5.800348381006741647e+02 1.541022083865430403e+01
5.801348381006740738e+02 1.492716420696420343e+01
5.802348381006740965e+02 1.443226191658533786e+01
5.803348381006741192e+02 1.392700169613664585e+01
5.804348381006741420e+02 1.341296925666203421e+01
5.805348381006741647e+02 1.289183421892070314e+01

5.806348381006740738e+02 1.236533463460092364e+01
5.807348381006740965e+02 1.183526033201370531e+01

FS O

5.269634292919474774e+02 3.901812008296885546e-12
5.270634292919475001e+02 1.387192545105326067e-11
5.271634292919475229e+02 4.278960751741309342e-11
5.272634292919474319e+02 1.215832928422437482e-10
5.273634292919474547e+02 3.329282539790597623e-10
5.274634292919474774e+02 8.974034967958064012e-10
5.275634292919475001e+02 2.392707235651217675e-09
5.276634292919475229e+02 6.313163268365164820e-09
5.277634292919474319e+02 1.653780921433462740e-08
5.278634292919474547e+02 4.332277605653248597e-08
5.279634292919474774e+02 1.143883030171904731e-07
5.280634292919475001e+02 3.056522652122271205e-07
5.281634292919475229e+02 8.251496955891734657e-07
5.282634292919474319e+02 2.239049888369190949e-06
5.283634292919474547e+02 6.078661763596250447e-06
5.284634292919474774e+02 1.647977859399211097e-05
5.285634292919475001e+02 4.460646624910457090e-05
5.286634292919475229e+02 1.203810930558234888e-04
5.287634292919474319e+02 3.227721834438773631e-04
5.288634292919474547e+02 8.565590101823922654e-04
5.289634292919474774e+02 2.246495209605166386e-03
5.290634292919475001e+02 5.833333579297942523e-03
5.291634292919475229e+02 1.506247124974869483e-02
5.292634292919474319e+02 3.891299819608092653e-02
5.293634292919474547e+02 1.012369601566788652e-01
5.294634292919474774e+02 2.662556208339904584e-01
5.295634292919475001e+02 7.058619413526624475e-01
5.296634292919475229e+02 1.862646096209320090e+00
5.297634292919474319e+02 4.764416667178821285e+00
5.298634292919474547e+02 1.122519399939862694e+01
5.299634292919474774e+02 2.248388828348667801e+01
5.300634292919475001e+02 3.589758918733146942e+01
5.301634292919475229e+02 4.667300234069087850e+01
5.302634292919474319e+02 5.352312611251353758e+01
5.303634292919474547e+02 5.760090863876243361e+01
5.304634292919474774e+02 5.971920982125887889e+01
5.305634292919475001e+02 6.007898821402264389e+01
5.306634292919475229e+02 5.882165285635090868e+01
5.307634292919474319e+02 5.631232899716276563e+01
5.308634292919474547e+02 5.308386876317057101e+01
5.309634292919474774e+02 4.965831609305038796e+01
5.310634292919475001e+02 4.641738069227149310e+01

5.311634292919475229e+02 4.357548825325240216e+01
5.312634292919474319e+02 4.122317793446813994e+01
5.313634292919474547e+02 3.937451707892279273e+01
5.314634292919474774e+02 3.799196507742551887e+01
5.315634292919475001e+02 3.702228021468310715e+01
5.316634292919475229e+02 3.642821119959143061e+01
5.317634292919474319e+02 3.608880767080896135e+01
5.318634292919474547e+02 3.560425908259871619e+01
5.319634292919474774e+02 3.444618065817758890e+01
5.320634292919475001e+02 3.255285654092411107e+01
5.321634292919475229e+02 3.050107761817412211e+01
5.322634292919474319e+02 2.887715797176237942e+01
5.323634292919474547e+02 2.780080087231706187e+01
5.324634292919474774e+02 2.711624084060085238e+01
5.325634292919475001e+02 2.671221816802764693e+01
5.326634292919475229e+02 2.660217111674181822e+01
5.327634292919474319e+02 2.686608096073184626e+01
5.328634292919474547e+02 2.758132104668375462e+01
5.329634292919474774e+02 2.877667049301867053e+01
5.330634292919475001e+02 3.041325513921496082e+01
5.331634292919475229e+02 3.238793350298477236e+01
5.332634292919474319e+02 3.455009918700147864e+01
5.333634292919474547e+02 3.672379476692535150e+01
5.334634292919474774e+02 3.873037239211731730e+01
5.335634292919475001e+02 4.040912059804188061e+01
5.336634292919475229e+02 4.163386915097481022e+01
5.337634292919474319e+02 4.232382986525430368e+01
5.338634292919474547e+02 4.244770553914987943e+01
5.339634292919474774e+02 4.202131957020085196e+01
5.340634292919475001e+02 4.110013518002730848e+01
5.341634292919475229e+02 3.976862820699314938e+01
5.342634292919474319e+02 3.812849572633674455e+01
5.343634292919474547e+02 3.628732409209972332e+01
5.344634292919474774e+02 3.434885075764897522e+01
5.345634292919475001e+02 3.240549249969205192e+01
5.346634292919475229e+02 3.053342886382626631e+01
5.347634292919474319e+02 2.879021572092847592e+01
5.348634292919474547e+02 2.721464719830688495e+01
5.349634292919474774e+02 2.582839136956986437e+01
5.350634292919475001e+02 2.463881464458715342e+01
5.351634292919475229e+02 2.364239413294165360e+01
5.352634292919474319e+02 2.282818943291886882e+01
5.353634292919474547e+02 2.218097883181302166e+01
5.354634292919474774e+02 2.168382312958568292e+01
5.355634292919475001e+02 2.131996845936648199e+01
5.356634292919475229e+02 2.107411362307175651e+01

5.357634292919474319e+02 2.093313772140593443e+01
5.358634292919474547e+02 2.088641272970048846e+01
5.359634292919474774e+02 2.092582346318153697e+01
5.360634292919475001e+02 2.104559713497888751e+01
5.361634292919475229e+02 2.124201822138659423e+01
5.362634292919474319e+02 2.151307988475243604e+01
5.363634292919474547e+02 2.185810497344432335e+01
5.364634292919474774e+02 2.227735841124220428e+01
5.365634292919475001e+02 2.277166720800848054e+01
5.366634292919475229e+02 2.334206206801960093e+01
5.367634292919474319e+02 2.398945343391005380e+01
5.368634292919474547e+02 2.471435324431436698e+01
5.369634292919474774e+02 2.551665100815655762e+01
5.370634292919475001e+02 2.639544904502754719e+01
5.371634292919475229e+02 2.734895741331184382e+01
5.372634292919474319e+02 2.837444482603638107e+01
5.373634292919474547e+02 2.946823835908143963e+01
5.374634292919474774e+02 3.062576240365008573e+01
5.375634292919475001e+02 3.184160626680436934e+01
5.376634292919475229e+02 3.310961001087466826e+01
5.377634292919474319e+02 3.442295930833514461e+01
5.378634292919474547e+02 3.577428194892165436e+01
5.379634292919474774e+02 3.715574082912797849e+01
5.380634292919475001e+02 3.855912047502506823e+01
5.381634292919475229e+02 3.997590615766385724e+01
5.382634292919474319e+02 4.139735629288875884e+01
5.383634292919474547e+02 4.281456998469062114e+01
5.384634292919474774e+02 4.421855224666060025e+01
5.385634292919475001e+02 4.560027964207479556e+01
5.386634292919475229e+02 4.695076887731148929e+01
5.387634292919474319e+02 4.826115034651417801e+01
5.388634292919474547e+02 4.952274785160139459e+01
5.389634292919474774e+02 5.072716480963253360e+01
5.390634292919475001e+02 5.186637630578000824e+01
5.391634292919475229e+02 5.293282544328138783e+01
5.392634292919474319e+02 5.391952165734272029e+01
5.393634292919474547e+02 5.482013805678637652e+01
5.394634292919474774e+02 5.562910447470393649e+01
5.395634292919475001e+02 5.634169276652325209e+01
5.396634292919475229e+02 5.695409098992433172e+01
5.397634292919474319e+02 5.746346341729550034e+01
5.398634292919474547e+02 5.786799383463930724e+01
5.399634292919474774e+02 5.816691022717167669e+01
5.400634292919475001e+02 5.836048969132792763e+01
5.401634292919475229e+02 5.845004319380586111e+01
5.402634292919474319e+02 5.843788057121586377e+01

5.403634292919474547e+02 5.832725688500963912e+01
5.404634292919474774e+02 5.812230187972816964e+01
5.405634292919475001e+02 5.782793481175721695e+01
5.406634292919475229e+02 5.744976730417073441e+01
5.407634292919474319e+02 5.699399713399363776e+01
5.408634292919474547e+02 5.646729597317435889e+01
5.409634292919474774e+02 5.587669409287907030e+01
5.410634292919475001e+02 5.522946491719923046e+01
5.411634292919475229e+02 5.453301209563721841e+01
5.412634292919474319e+02 5.379476147454995782e+01
5.413634292919474547e+02 5.302206000738325997e+01
5.414634292919474774e+02 5.222208327253712667e+01
5.415634292919475001e+02 5.140175288479024829e+01
5.416634292919475229e+02 5.056766470759835386e+01
5.417634292919474319e+02 4.972602841256220074e+01
5.418634292919474547e+02 4.888261859916323004e+01
5.419634292919474774e+02 4.804273738972371177e+01
5.420634292919475001e+02 4.721118815592958384e+01
5.421634292919475229e+02 4.639225981624491624e+01
5.422634292919474319e+02 4.558972096822863307e+01
5.423634292919474547e+02 4.480682298470470926e+01
5.424634292919474774e+02 4.404631110536725203e+01
5.425634292919475001e+02 4.331044249244182254e+01
5.426634292919475229e+02 4.260101018677810458e+01
5.427634292919474319e+02 4.191937189537819108e+01
5.428634292919474547e+02 4.126648255908552443e+01
5.429634292919474774e+02 4.064292968634985925e+01
5.430634292919475001e+02 4.004897049229063555e+01
5.431634292919475229e+02 3.948456994861938085e+01
5.432634292919474319e+02 3.894943892656440454e+01
5.433634292919474547e+02 3.844307169923938972e+01
5.434634292919474774e+02 3.796478215962343938e+01
5.435634292919475001e+02 3.751373820339111376e+01
5.436634292919475229e+02 3.708899382034544345e+01
5.437634292919474319e+02 3.668951853241235028e+01
5.438634292919474547e+02 3.631422390845771986e+01
5.439634292919474774e+02 3.596198697511799480e+01
5.440634292919475001e+02 3.563167042708177235e+01
5.441634292919475229e+02 3.532213961865367224e+01
5.442634292919474319e+02 3.503227638997100968e+01
5.443634292919474547e+02 3.476098984510181822e+01
5.444634292919474774e+02 3.450722425478522126e+01
5.445634292919475001e+02 3.426996430333095134e+01
5.446634292919475229e+02 3.404823793691902267e+01
5.447634292919474319e+02 3.384111709916260224e+01
5.448634292919474547e+02 3.364771665944630996e+01

5.449634292919474774e+02 3.346719185051389900e+01
5.450634292919475001e+02 3.329873453451161680e+01
5.451634292919475229e+02 3.314156861178599911e+01
5.452634292919474319e+02 3.299494487489894823e+01
5.453634292919474547e+02 3.285813559236628123e+01
5.454634292919474774e+02 3.273042908342745960e+01
5.455634292919475001e+02 3.261112451765031039e+01
5.456634292919475229e+02 3.249952714232149731e+01
5.457634292919474319e+02 3.239494410734348406e+01
5.458634292919474547e+02 3.229668102270706243e+01
5.459634292919474774e+02 3.220403934846221716e+01
5.460634292919475001e+02 3.211631468234643449e+01
5.461634292919475229e+02 3.203279597666603706e+01
5.462634292919474319e+02 3.195276568439941300e+01
5.463634292919474547e+02 3.187550080545222997e+01
5.464634292919474774e+02 3.180027477809446168e+01
5.465634292919475001e+02 3.172636013828815038e+01
5.466634292919475229e+02 3.165303185120609086e+01
5.467634292919474319e+02 3.157957120495193948e+01
5.468634292919474547e+02 3.150527014641878054e+01
5.469634292919474774e+02 3.142943593333822605e+01
5.470634292919475001e+02 3.135139597473893147e+01
5.471634292919475229e+02 3.127050273400942260e+01
5.472634292919474319e+02 3.118613857420585589e+01
5.473634292919474547e+02 3.109772043373968486e+01
5.474634292919474774e+02 3.100470423163541156e+01
5.475634292919475001e+02 3.090658891462505409e+01
5.476634292919475229e+02 3.080292007287813405e+01
5.477634292919474319e+02 3.069329306656931777e+01
5.478634292919474547e+02 3.057735562119567163e+01
5.479634292919474774e+02 3.045480986502344223e+01
5.480634292919475001e+02 3.032541379678243487e+01
5.481634292919475229e+02 3.018898218529522381e+01
5.482634292919474319e+02 3.004538691477732115e+01
5.483634292919474547e+02 2.989455679980154912e+01
5.484634292919474774e+02 2.973647690220794004e+01
5.485634292919475001e+02 2.957118738847624329e+01
5.486634292919475229e+02 2.939878197027405093e+01
5.487634292919474319e+02 2.921940597314373633e+01
5.488634292919474547e+02 2.903325407877493092e+01
5.489634292919474774e+02 2.884056778526120723e+01
5.490634292919475001e+02 2.864163262745341854e+01
5.491634292919475229e+02 2.843677519631733475e+01
5.492634292919474319e+02 2.822635999241620652e+01
5.493634292919474547e+02 2.801078614460283234e+01
5.494634292919474774e+02 2.779048402103430959e+01

5.495634292919475001e+02 2.756591175598664378e+01
5.496634292919475229e+02 2.733755171288195385e+01
5.497634292919474319e+02 2.710590690160590555e+01
5.498634292919474547e+02 2.687149736670110656e+01
5.499634292919474774e+02 2.663485656239997468e+01
5.500634292919475001e+02 2.639652773068478808e+01
5.501634292919475229e+02 2.615706029953856415e+01
5.502634292919474319e+02 2.591700632012938499e+01
5.503634292919474547e+02 2.567691696367369403e+01
5.504634292919474774e+02 2.543733910092442940e+01
5.505634292919475001e+02 2.519881198939976130e+01
5.506634292919475229e+02 2.496186409537466488e+01
5.507634292919474319e+02 2.472701007907477333e+01
5.508634292919474547e+02 2.449474797225013845e+01
5.509634292919474774e+02 2.426555657720412285e+01
5.510634292919475001e+02 2.403989311529902295e+01
5.511634292919475229e+02 2.381819115089203720e+01
5.512634292919474319e+02 2.360085881356697257e+01
5.513634292919474547e+02 2.338827733746371962e+01
5.514634292919474774e+02 2.318079993156617036e+01
5.515634292919475001e+02 2.297875098912861347e+01
5.516634292919475229e+02 2.278242563818159994e+01
5.517634292919474319e+02 2.259208962845949742e+01
5.518634292919474547e+02 2.240797954335920750e+01
5.519634292919474774e+02 2.223030331889287936e+01
5.520634292919475001e+02 2.205924104526121710e+01
5.521634292919475229e+02 2.189494602085244068e+01
5.522634292919474319e+02 2.173754602334842900e+01
5.523634292919474547e+02 2.158714475834734614e+01
5.524634292919474774e+02 2.144382344261471474e+01
5.525634292919475001e+02 2.130764247683304546e+01
5.526634292919475229e+02 2.117864316158731697e+01
5.527634292919474319e+02 2.105684941031010027e+01
5.528634292919474547e+02 2.094226941400349062e+01
5.529634292919474774e+02 2.083489721470535727e+01
5.530634292919475001e+02 2.073471414781315403e+01
5.531634292919475229e+02 2.064169011743009463e+01
5.532634292919474319e+02 2.055578467376115981e+01
5.533634292919474547e+02 2.047694786715214121e+01
5.534634292919474774e+02 2.040512085952155985e+01
5.535634292919475001e+02 2.034023628056922206e+01
5.536634292919475229e+02 2.028221832313769113e+01
5.537634292919474319e+02 2.023098257933698108e+01
5.538634292919474547e+02 2.018643562639702438e+01
5.539634292919474774e+02 2.014847437856367307e+01
5.540634292919475001e+02 2.011698522857086857e+01

5.541634292919475229e+02 2.009184300917198129e+01
5.542634292919474319e+02 2.007290981175103894e+01
5.543634292919474547e+02 2.006003370500990002e+01
5.544634292919474774e+02 2.005304740198533509e+01
5.545634292919475001e+02 2.005176692802477945e+01
5.546634292919475229e+02 2.005599034568303907e+01
5.547634292919474319e+02 2.006549659463491153e+01
5.548634292919474547e+02 2.008004450548407149e+01
5.549634292919474774e+02 2.009937204565960656e+01
5.550634292919475001e+02 2.012319585332687666e+01
5.551634292919475229e+02 2.015121111133133525e+01
5.552634292919474319e+02 2.018309180762149779e+01
5.553634292919474547e+02 2.021849142138477617e+01
5.554634292919474774e+02 2.025704406535999880e+01
5.555634292919475001e+02 2.029836610460455049e+01
5.556634292919475229e+02 2.034205826059154276e+01
5.557634292919474319e+02 2.038770819715398730e+01
5.558634292919474547e+02 2.043489357178969712e+01
5.559634292919474774e+02 2.048318552255295089e+01
5.560634292919475001e+02 2.053215254758109864e+01
5.561634292919475229e+02 2.058136472165400477e+01
5.562634292919474319e+02 2.063039818248784840e+01
5.563634292919474547e+02 2.067883980914043107e+01
5.564634292919474774e+02 2.072629200634444047e+01
5.565634292919475001e+02 2.077237750214124645e+01
5.566634292919475229e+02 2.081674406215057616e+01
5.567634292919474319e+02 2.085906902240344607e+01
5.568634292919474547e+02 2.089906354402269173e+01
5.569634292919474774e+02 2.093647649719898141e+01
5.570634292919475001e+02 2.097109788882724501e+01
5.571634292919475229e+02 2.100276175768204467e+01
5.572634292919474319e+02 2.103134847287026332e+01
5.573634292919474547e+02 2.105678638516462797e+01
5.574634292919474774e+02 2.107905279627103567e+01
5.575634292919475001e+02 2.109817422763463313e+01
5.576634292919475229e+02 2.111422598751134316e+01
5.577634292919474319e+02 2.112733105216732454e+01
5.578634292919474547e+02 2.113765829365430804e+01
5.579634292919474774e+02 2.114542010209596867e+01
5.580634292919475001e+02 2.115086946429826398e+01
5.581634292919475229e+02 2.115429657231168648e+01
5.582634292919474319e+02 2.115602504494342284e+01
5.583634292919474547e+02 2.115640785185334138e+01
5.584634292919474774e+02 2.115582303357712490e+01
5.585634292919475001e+02 2.115466931152095142e+01
5.586634292919475229e+02 2.115336167968833081e+01

5.587634292919474319e+02 2.115232706477134883e+01
5.588634292919474547e+02 2.115200013349770458e+01
5.589634292919474774e+02 2.115281931610785904e+01
5.590634292919475001e+02 2.115522310294995378e+01
5.591634292919475229e+02 2.115964665789812216e+01
5.592634292919474319e+02 2.116651877813990623e+01
5.593634292919474547e+02 2.117625921538014211e+01
5.594634292919474774e+02 2.118927635921673769e+01
5.595634292919475001e+02 2.120596526988198605e+01
5.596634292919475229e+02 2.122670603520174026e+01
5.597634292919474319e+02 2.125186241593271674e+01
5.598634292919474547e+02 2.128178073496065537e+01
5.599634292919474774e+02 2.131678895945264429e+01
5.600634292919475001e+02 2.135719592114573828e+01
5.601634292919475229e+02 2.140329061860417426e+01
5.602634292919474319e+02 2.145534154648313319e+01
5.603634292919474547e+02 2.151359600048747467e+01
5.604634292919474774e+02 2.157827931261391541e+01
5.605634292919475001e+02 2.164959397913573014e+01
5.606634292919475229e+02 2.172771865328447660e+01
5.607634292919474319e+02 2.181280698530105866e+01
5.608634292919474547e+02 2.190498630403238778e+01
5.609634292919474774e+02 2.200435614607809853e+01
5.610634292919475001e+02 2.211098665018353060e+01
5.611634292919475229e+02 2.222491684568041137e+01
5.612634292919474319e+02 2.234615287387829596e+01
5.613634292919474547e+02 2.247466619003097321e+01
5.614634292919474774e+02 2.261039180052984321e+01
5.615634292919475001e+02 2.275322659505552991e+01
5.616634292919475229e+02 2.290302783637842055e+01
5.617634292919474319e+02 2.305961187123833156e+01
5.618634292919474547e+02 2.322275312423471405e+01
5.619634292919474774e+02 2.339218343298504621e+01
5.620634292919475001e+02 2.356759177708927666e+01
5.621634292919475229e+02 2.374862444587701660e+01
5.622634292919474319e+02 2.393488568076485024e+01
5.623634292919474547e+02 2.412593881762178682e+01
5.624634292919474774e+02 2.432130794316610434e+01
5.625634292919475001e+02 2.452048006746161946e+01
5.626634292919475229e+02 2.472290780241165109e+01
5.627634292919474319e+02 2.492801252413306301e+01
5.628634292919474547e+02 2.513518798558156675e+01
5.629634292919474774e+02 2.534380433511467601e+01
5.630634292919475001e+02 2.555321248711318560e+01
5.631634292919475229e+02 2.576274878257828505e+01
5.632634292919474319e+02 2.597173987097746206e+01

5.633634292919474547e+02 2.617950773967337952e+01
5.634634292919474774e+02 2.638537481412517849e+01
5.635634292919475001e+02 2.658866905073791997e+01
5.636634292919475229e+02 2.678872894473745703e+01
5.637634292919474319e+02 2.698490837769947603e+01
5.638634292919474547e+02 2.717658123325594843e+01
5.639634292919474774e+02 2.736314571489202052e+01
5.640634292919475001e+02 2.754402830645331335e+01
5.641634292919475229e+02 2.771868732380720601e+01
5.642634292919474319e+02 2.788661601481760499e+01
5.643634292919474547e+02 2.804734517417489315e+01
5.644634292919474774e+02 2.820044524943240205e+01
5.645634292919475001e+02 2.834552792460748094e+01
5.646634292919475229e+02 2.848224717768481185e+01
5.647634292919474319e+02 2.861029981809649669e+01
5.648634292919474547e+02 2.872942551955633306e+01
5.649634292919474774e+02 2.883940637231451376e+01
5.650634292919475001e+02 2.894006598682193498e+01
5.651634292919475229e+02 2.903126818781733220e+01
5.652634292919474319e+02 2.911291534387252256e+01
5.653634292919474547e+02 2.918494638236541761e+01
5.654634292919474774e+02 2.924733454364391605e+01
5.655634292919475001e+02 2.930008493076067211e+01
5.656634292919475229e+02 2.934323191258820174e+01
5.657634292919474319e+02 2.937683643837927860e+01
5.658634292919474547e+02 2.940098332094766675e+01
5.659634292919474774e+02 2.941577854365770861e+01
5.660634292919475001e+02 2.942134664339760164e+01
5.661634292919475229e+02 2.941782821774605239e+01
5.662634292919474319e+02 2.940537759972511012e+01
5.663634292919474547e+02 2.938416073796119221e+01
5.664634292919474774e+02 2.935435331387652980e+01
5.665634292919475001e+02 2.931613912081720486e+01
5.666634292919475229e+02 2.926970872292955761e+01
5.667634292919474319e+02 2.921525840425417897e+01
5.668634292919474547e+02 2.915298941105465502e+01
5.669634292919474774e+02 2.908310748297844839e+01
5.670634292919475001e+02 2.900582266139690546e+01
5.671634292919475229e+02 2.892134935633207249e+01
5.672634292919474319e+02 2.882990664688261973e+01
5.673634292919474547e+02 2.873171878414397895e+01
5.674634292919474774e+02 2.862701586039918311e+01
5.675634292919475001e+02 2.851603460395501344e+01
5.676634292919475229e+02 2.839901925551499673e+01
5.677634292919474319e+02 2.827622247950829504e+01
5.678634292919474547e+02 2.814790626240539240e+01

5.679634292919474774e+02 2.801434274980377381e+01
5.680634292919475001e+02 2.787581497499552796e+01
5.681634292919475229e+02 2.773261743384390954e+01
5.682634292919474319e+02 2.758505646408659828e+01
5.683634292919474547e+02 2.743345039160506360e+01
5.684634292919474774e+02 2.727812941168676275e+01
5.685634292919475001e+02 2.711943517975931783e+01
5.686634292919475229e+02 2.695772009336731045e+01
5.687634292919474319e+02 2.679334625513828172e+01
5.688634292919474547e+02 2.662668411496576937e+01
5.689634292919474774e+02 2.645811079842040314e+01
5.690634292919475001e+02 2.628800813726657992e+01
5.691634292919475229e+02 2.611676042667644282e+01
5.692634292919474319e+02 2.594475194205903179e+01
5.693634292919474547e+02 2.577236425611552306e+01
5.694634292919474774e+02 2.559997340356541073e+01
5.695634292919475001e+02 2.542794694674226719e+01
5.696634292919475229e+02 2.525664099974071775e+01
5.697634292919474319e+02 2.508639727184547041e+01
5.698634292919474547e+02 2.491754019246487672e+01
5.699634292919474774e+02 2.475037417964301056e+01
5.700634292919475001e+02 2.458518111240454118e+01
5.701634292919475229e+02 2.442221806371399140e+01
5.702634292919474319e+02 2.426171534577550304e+01
5.703634292919474547e+02 2.410387491288523520e+01
5.704634292919474774e+02 2.394886915924833914e+01
5.705634292919475001e+02 2.379684014030129902e+01
5.706634292919475229e+02 2.364789923639666469e+01
5.707634292919474319e+02 2.350212726749155934e+01
5.708634292919474547e+02 2.335957505704225667e+01
5.709634292919474774e+02 2.322026443295635900e+01
5.710634292919475001e+02 2.308418964350575209e+01
5.711634292919475229e+02 2.295131915685433199e+01
5.712634292919474319e+02 2.282159780458069775e+01
5.713634292919474547e+02 2.269494922251449509e+01
5.714634292919474774e+02 2.257127853655148897e+01
5.715634292919475001e+02 2.245047523701048320e+01
5.716634292919475229e+02 2.233241618262920625e+01
5.717634292919474319e+02 2.221696867449473700e+01
5.718634292919474547e+02 2.210399354103137171e+01
5.719634292919474774e+02 2.199334817753418037e+01
5.720634292919475001e+02 2.188488948749255769e+01
5.721634292919475229e+02 2.177847667790423714e+01
5.722634292919474319e+02 2.167397386670310766e+01
5.723634292919474547e+02 2.157125246706006294e+01
5.724634292919474774e+02 2.147019332038703254e+01

5.725634292919475001e+02 2.137068855710647597e+01
5.726634292919475229e+02 2.127264317137307970e+01
5.727634292919474319e+02 2.117597630270154241e+01
5.728634292919474547e+02 2.108062222365099814e+01
5.729634292919474774e+02 2.098653103816288024e+01
5.730634292919475001e+02 2.089366909971671760e+01
5.731634292919475229e+02 2.080201916207964530e+01
5.732634292919474319e+02 2.071158027805248736e+01
5.733634292919474547e+02 2.062236746328939319e+01
5.734634292919474774e+02 2.053441114305951132e+01
5.735634292919475001e+02 2.044775639985191162e+01
5.736634292919475229e+02 2.036246203914758013e+01
5.737634292919474319e+02 2.027859948967360637e+01
5.738634292919474547e+02 2.019625155320634136e+01
5.739634292919474774e+02 2.011551101769164873e+01
5.740634292919475001e+02 2.003647914628478688e+01
5.741634292919475229e+02 1.995926405404025417e+01
5.742634292919474319e+02 1.988397898352960524e+01
5.743634292919474547e+02 1.981074049072477550e+01
5.744634292919474774e+02 1.973966655309713758e+01
5.745634292919475001e+02 1.967087461304569729e+01
5.746634292919475229e+02 1.960447957142652697e+01
5.747634292919474319e+02 1.954059174801104604e+01
5.748634292919474547e+02 1.947931482801153891e+01
5.749634292919474774e+02 1.942074381620469481e+01
5.750634292919475001e+02 1.936496302245998180e+01
5.751634292919475229e+02 1.931204410443125141e+01
5.752634292919474319e+02 1.926204419458706951e+01
5.753634292919474547e+02 1.921500413944598407e+01
5.754634292919474774e+02 1.917094687867606240e+01
5.755634292919475001e+02 1.912987599048642551e+01
5.756634292919475229e+02 1.909177442739748187e+01
5.757634292919474319e+02 1.905660346300039976e+01
5.758634292919474547e+02 1.902430186573926818e+01
5.759634292919474774e+02 1.899478531016519156e+01
5.760634292919475001e+02 1.896794602968076049e+01
5.761634292919475229e+02 1.894365270772777166e+01
5.762634292919474319e+02 1.892175059693609995e+01
5.763634292919474547e+02 1.890206184825076718e+01
5.764634292919474774e+02 1.888438602481818407e+01
5.765634292919475001e+02 1.886850076878559790e+01
5.766634292919475229e+02 1.885416258349192731e+01
5.767634292919474319e+02 1.884110768912783840e+01
5.768634292919474547e+02 1.882905290710949942e+01
5.769634292919474774e+02 1.881769652738667631e+01
5.770634292919475001e+02 1.880671911387570816e+01

5.771634292919475229e+02 1.879578420628097390e+01
5.772634292919474319e+02 1.878453888177742215e+01
5.773634292919474547e+02 1.877261414731581368e+01
5.774634292919474774e+02 1.875962514254074520e+01
5.775634292919475001e+02 1.874517114424947550e+01
5.776634292919475229e+02 1.872883537565771306e+01
5.777634292919474319e+02 1.871018463708952240e+01
5.778634292919474547e+02 1.868876878862460345e+01
5.779634292919474774e+02 1.866412012921536245e+01
5.780634292919475001e+02 1.863575273029364965e+01
5.781634292919475229e+02 1.860316179436889428e+01
5.782634292919474319e+02 1.856582312002213797e+01
5.783634292919474547e+02 1.852319276349255617e+01
5.784634292919474774e+02 1.847470699324103549e+01
5.785634292919475001e+02 1.841978263702643659e+01
5.786634292919475229e+02 1.835781792078856256e+01
5.787634292919474319e+02 1.828819389473585488e+01
5.788634292919474547e+02 1.821027653433318250e+01
5.789634292919474774e+02 1.812341959234293043e+01
5.790634292919475001e+02 1.802696826278679509e+01
5.791634292919475229e+02 1.792026369889711646e+01
5.792634292919474319e+02 1.780264840517529734e+01
5.793634292919474547e+02 1.767347249906603679e+01
5.794634292919474774e+02 1.753210081110062291e+01
5.795634292919475001e+02 1.737792076438043765e+01
5.796634292919475229e+02 1.721035094577347735e+01
5.797634292919474319e+02 1.702885025305615585e+01
5.798634292919474547e+02 1.683292747536894396e+01
5.799634292919474774e+02 1.662215113969498503e+01
5.800634292919475001e+02 1.639615943452631086e+01
5.801634292919475229e+02 1.615467000431110378e+01
5.802634292919474319e+02 1.589748939545078166e+01
5.803634292919474547e+02 1.562452192719812594e+01
5.804634292919474774e+02 1.533577775931138376e+01
5.805634292919475001e+02 1.503137993309070630e+01
5.806634292919475229e+02 1.471157017362113706e+01
5.807634292919474319e+02 1.437671325862381977e+01
5.808634292919474547e+02 1.402729978302185465e+01
5.809634292919474774e+02 1.366394717769371070e+01
5.810634292919475001e+02 1.328739887525185281e+01
5.811634292919475229e+02 1.289852155419966451e+01
5.812634292919474319e+02 1.249830043447441597e+01
5.813634292919474547e+02 1.208783264104309296e+01
5.814634292919474774e+02 1.166831869664637011e+01
5.815634292919475001e+02 1.124105224870187847e+01
5.816634292919475229e+02 1.080740817749006588e+01

5.817634292919474319e+02 1.036882927179674851e+01
5.818634292919474547e+02 9.926811693007190129e+00

NB O

5.251260054359087235e+02 2.322963971323467633e-12
5.252260054359087462e+02 8.291429904931121995e-12
5.253260054359087690e+02 2.580348791206309268e-11
5.254260054359086780e+02 7.447955701085361174e-11
5.255260054359087007e+02 2.093057069276391276e-10
5.256260054359087235e+02 5.860453756957771115e-10
5.257260054359087462e+02 1.642839090009540872e-09
5.258260054359087690e+02 4.590227005191672198e-09
5.259260054359086780e+02 1.270842145776562442e-08
5.260260054359087007e+02 3.474269065918106652e-08
5.261260054359087235e+02 9.383064894680974439e-08
5.262260054359087462e+02 2.512333902426491271e-07
5.263260054359087690e+02 6.700648472342702675e-07
5.264260054359086780e+02 1.787836197387598011e-06
5.265260054359087007e+02 4.786087558647254913e-06
5.266260054359087235e+02 1.287004002731218252e-05
5.267260054359087462e+02 3.474271083573672201e-05
5.268260054359087690e+02 9.395139743550793416e-05
5.269260054359086780e+02 2.536932441900052780e-04
5.270260054359087007e+02 6.818061644641431208e-04
5.271260054359087235e+02 1.819819787433281637e-03
5.272260054359087462e+02 4.821503054328109272e-03
5.273260054359087690e+02 1.268700363613710705e-02
5.274260054359086780e+02 3.317652163105677676e-02
5.275260054359087007e+02 8.622652186766927018e-02
5.276260054359087235e+02 2.226779130042951527e-01
5.277260054359087462e+02 5.714142649373888938e-01
5.278260054359087690e+02 1.457152630523520287e+00
5.279260054359086780e+02 3.680354520955272157e+00
5.280260054359087007e+02 9.054382792831903615e+00
5.281260054359087235e+02 2.070842288108439178e+01
5.282260054359087462e+02 4.052379163191083933e+01
5.283260054359087690e+02 6.315814235993762793e+01
5.284260054359086780e+02 7.962712350399689853e+01
5.285260054359087007e+02 8.804881610625034227e+01
5.286260054359087235e+02 9.163793451924004785e+01
5.287260054359087462e+02 9.326845118502319565e+01
5.288260054359087690e+02 9.440517685635586531e+01
5.289260054359086780e+02 9.560663667281248479e+01
5.290260054359087007e+02 9.700070079893643538e+01
5.291260054359087235e+02 9.858978550657030837e+01
5.292260054359087462e+02 1.004125120185783260e+02

5.293260054359087690e+02 1.025259109454742088e+02
5.294260054359086780e+02 1.048133486756297827e+02
5.295260054359087007e+02 1.067930201378117516e+02
5.296260054359087235e+02 1.076891719264972096e+02
5.297260054359087462e+02 1.068469663349570311e+02
5.298260054359087690e+02 1.041803842193130976e+02
5.299260054359086780e+02 1.000691837661018440e+02
5.300260054359087007e+02 9.466745086091145822e+01
5.301260054359087235e+02 8.777804236960722051e+01
5.302260054359087462e+02 7.982878820271606912e+01
5.303260054359087690e+02 7.216578081549957346e+01
5.304260054359086780e+02 6.580115849459089361e+01
5.305260054359087007e+02 6.064153285333920707e+01
5.306260054359087235e+02 5.612242664570246120e+01
5.307260054359087462e+02 5.190646361914947704e+01
5.308260054359087690e+02 4.794482208665368717e+01
5.309260054359086780e+02 4.430055737316027376e+01
5.310260054359087007e+02 4.104122794309094502e+01
5.311260054359087235e+02 3.820608440534078909e+01
5.312260054359087462e+02 3.579987722856163401e+01
5.313260054359087690e+02 3.379416878517681511e+01
5.314260054359086780e+02 3.213355231164455716e+01
5.315260054359087007e+02 3.074676575786702770e+01
5.316260054359087235e+02 2.956040997789460789e+01
5.317260054359087462e+02 2.851117965726676573e+01
5.318260054359087690e+02 2.755311087303861939e+01
5.319260054359086780e+02 2.665872226969151626e+01
5.320260054359087007e+02 2.581542288754157610e+01
5.321260054359087235e+02 2.501988579779774824e+01
5.322260054359087462e+02 2.427293674497126119e+01
5.323260054359087690e+02 2.357639537410983976e+01
5.324260054359086780e+02 2.293202362670774264e+01
5.325260054359087007e+02 2.234186975654439067e+01
5.326260054359087235e+02 2.180904068759068792e+01
5.327260054359087462e+02 2.133815717809372359e+01
5.328260054359087690e+02 2.093517219573494259e+01
5.329260054359086780e+02 2.060661865069682364e+01
5.330260054359087007e+02 2.035856852011835372e+01
5.331260054359087235e+02 2.019561922253345188e+01
5.332260054359087462e+02 2.012013517087016368e+01
5.333260054359087690e+02 2.013184208885809667e+01
5.334260054359086780e+02 2.022775998812231180e+01
5.335260054359087007e+02 2.040239634586751549e+01
5.336260054359087235e+02 2.064810418517357604e+01
5.337260054359087462e+02 2.095552452377254937e+01
5.338260054359087690e+02 2.131405956928840340e+01

5.339260054359086780e+02 2.171234734714000680e+01
5.340260054359087007e+02 2.213872308943322764e+01
5.341260054359087235e+02 2.258165737957535413e+01
5.342260054359087462e+02 2.303015937252960299e+01
5.343260054359087690e+02 2.347413004443249918e+01
5.344260054359086780e+02 2.390464899009446853e+01
5.345260054359087007e+02 2.431418049663415104e+01
5.346260054359087235e+02 2.469669035257086165e+01
5.347260054359087462e+02 2.504767275508453750e+01
5.348260054359087690e+02 2.536409493624698541e+01
5.349260054359086780e+02 2.564427408658364271e+01
5.350260054359087007e+02 2.588770570038154517e+01
5.351260054359087235e+02 2.609486416194069847e+01
5.352260054359087462e+02 2.626699539994901755e+01
5.353260054359087690e+02 2.640591834987426267e+01
5.354260054359086780e+02 2.651384758883035886e+01
5.355260054359087007e+02 2.659324467484656651e+01
5.356260054359087235e+02 2.664670114598352058e+01
5.357260054359087462e+02 2.667685232704767628e+01
5.358260054359087690e+02 2.668631833782660934e+01
5.359260054359086780e+02 2.667766707004733462e+01
5.360260054359087007e+02 2.665339330596288647e+01
5.361260054359087235e+02 2.661590838421961536e+01
5.362260054359087462e+02 2.656753562049694750e+01
5.363260054359087690e+02 2.651050780087995307e+01
5.364260054359086780e+02 2.644696425873205925e+01
5.365260054359087007e+02 2.637894615038058532e+01
5.366260054359087235e+02 2.630838945359526093e+01
5.367260054359087462e+02 2.623711587700673675e+01
5.368260054359087690e+02 2.616682228716528158e+01
5.369260054359086780e+02 2.609906946428773011e+01
5.370260054359087007e+02 2.603527103666703013e+01
5.371260054359087235e+02 2.597668337050021137e+01
5.372260054359087462e+02 2.592439705502103919e+01
5.373260054359087690e+02 2.587933046064790688e+01
5.374260054359086780e+02 2.584222568673268938e+01
5.375260054359087007e+02 2.581364707054617469e+01
5.376260054359087235e+02 2.579398230661469782e+01
5.377260054359087462e+02 2.578344612576221095e+01
5.378260054359087690e+02 2.578208640344006142e+01
5.379260054359086780e+02 2.578979250347519070e+01
5.380260054359087007e+02 2.580630561307135196e+01
5.381260054359087235e+02 2.583123078574123355e+01
5.382260054359087462e+02 2.586405037998128975e+01
5.383260054359087690e+02 2.590413856291381478e+01
5.384260054359086780e+02 2.595077654012561652e+01

5.385260054359087007e+02 2.600316817571567896e+01
5.386260054359087235e+02 2.606045567984037348e+01
5.387260054359087462e+02 2.612173506391286537e+01
5.388260054359087690e+02 2.618607109458638860e+01
5.389260054359086780e+02 2.625251151479636746e+01
5.390260054359087007e+02 2.632010034130802012e+01
5.391260054359087235e+02 2.638789009127895113e+01
5.392260054359087462e+02 2.645495283336827441e+01
5.393260054359087690e+02 2.652039000031276572e+01
5.394260054359086780e+02 2.658334093844251456e+01
5.395260054359087007e+02 2.664299020450183519e+01
5.396260054359087235e+02 2.669857365088144618e+01
5.397260054359087462e+02 2.674938336669201533e+01
5.398260054359087690e+02 2.679477156390575132e+01
5.399260054359086780e+02 2.683415351501595580e+01
5.400260054359087007e+02 2.686700966128523760e+01
5.401260054359087235e+02 2.689288701863426923e+01
5.402260054359087462e+02 2.691140001152414385e+01
5.403260054359087690e+02 2.692223086379457087e+01
5.404260054359086780e+02 2.692512966938704722e+01
5.405260054359087007e+02 2.691991425537756655e+01
5.406260054359087235e+02 2.690646993508221385e+01
5.407260054359087462e+02 2.688474923067756350e+01
5.408260054359087690e+02 2.685477162348249180e+01
5.409260054359086780e+02 2.681662336662953905e+01
5.410260054359087007e+02 2.677045737031478367e+01
5.411260054359087235e+02 2.671649314524448471e+01
5.412260054359087462e+02 2.665501676642195861e+01
5.413260054359087690e+02 2.658638079813418287e+01
5.414260054359086780e+02 2.651100410290849041e+01
5.415260054359087007e+02 2.642937144316210407e+01
5.416260054359087235e+02 2.634203277491336692e+01
5.417260054359087462e+02 2.624960212867776477e+01
5.418260054359087690e+02 2.615275597370180805e+01
5.419260054359086780e+02 2.605223096790499682e+01
5.420260054359087007e+02 2.594882100698062288e+01
5.421260054359087235e+02 2.584337350151328394e+01
5.422260054359087462e+02 2.573678482999597605e+01
5.423260054359087690e+02 2.562999493743070900e+01
5.424260054359086780e+02 2.552398107286079920e+01
5.425260054359087007e+02 2.541975068375475999e+01
5.426260054359087235e+02 2.531833350971080066e+01
5.427260054359087462e+02 2.522077294159930005e+01
5.428260054359087690e+02 2.512811673422105230e+01
5.429260054359086780e+02 2.504140718016442690e+01
5.430260054359087007e+02 2.496167086925947842e+01

5.431260054359087235e+02 2.488990817146427048e+01
5.432260054359087462e+02 2.482708259092860814e+01
5.433260054359087690e+02 2.477411014526071042e+01
5.434260054359086780e+02 2.473184892668755452e+01
5.435260054359087007e+02 2.470108900098242088e+01
5.436260054359087235e+02 2.468254279594922096e+01
5.437260054359087462e+02 2.467683612419718386e+01
5.438260054359087690e+02 2.468449997524550099e+01
5.439260054359086780e+02 2.470596320004175794e+01
5.440260054359087007e+02 2.474154619714023440e+01
5.441260054359087235e+02 2.479145569445116948e+01
5.442260054359087462e+02 2.485578070400875106e+01
5.443260054359087690e+02 2.493448970996358227e+01
5.444260054359086780e+02 2.502742913230531485e+01
5.445260054359087007e+02 2.513432309095465200e+01
5.446260054359087235e+02 2.525477447709331358e+01
5.447260054359087462e+02 2.538826732115753515e+01
5.448260054359087690e+02 2.553417043001027054e+01
5.449260054359086780e+02 2.569174224961171049e+01
5.450260054359087007e+02 2.586013689419008799e+01
5.451260054359087235e+02 2.603841126861773247e+01
5.452260054359087462e+02 2.622553319755606793e+01
5.453260054359087690e+02 2.642039046306388883e+01
5.454260054359086780e+02 2.662180064187922568e+01
5.455260054359087007e+02 2.682852162458371836e+01
5.456260054359087235e+02 2.703926269143076411e+01
5.457260054359087462e+02 2.725269601384353990e+01
5.458260054359087690e+02 2.746746844653167585e+01
5.459260054359086780e+02 2.768221347288575984e+01
5.460260054359087007e+02 2.789556316582182660e+01
5.461260054359087235e+02 2.810616002757409504e+01
5.462260054359087462e+02 2.831266857506795631e+01
5.463260054359087690e+02 2.851378654240902577e+01
5.464260054359086780e+02 2.870825557864561972e+01
5.465260054359087007e+02 2.889487132720894635e+01
5.466260054359087235e+02 2.907249278320352204e+01
5.467260054359087462e+02 2.924005083586489562e+01
5.468260054359087690e+02 2.939655591586340222e+01
5.469260054359086780e+02 2.954110468052093808e+01
5.470260054359087007e+02 2.967288568421489714e+01
5.471260054359087235e+02 2.979118399603876810e+01
5.472260054359087462e+02 2.989538474193251716e+01
5.473260054359087690e+02 2.998497556372971928e+01
5.474260054359086780e+02 3.005954800263182136e+01
5.475260054359087007e+02 3.011879782925374016e+01
5.476260054359087235e+02 3.016252435632326012e+01

5.477260054359087462e+02 3.019062878311848408e+01
5.478260054359087690e+02 3.020311163255165354e+01
5.479260054359086780e+02 3.020006935224813560e+01
5.480260054359087007e+02 3.018169015983784220e+01
5.481260054359087235e+02 3.014824921982322792e+01
5.482260054359087462e+02 3.010010324469980958e+01
5.483260054359087690e+02 3.003768461641180920e+01
5.484260054359086780e+02 2.996149512570032059e+01
5.485260054359087007e+02 2.987209942647137950e+01
5.486260054359087235e+02 2.977011830004476778e+01
5.487260054359087462e+02 2.965622182016365826e+01
5.488260054359087690e+02 2.953112250411720296e+01
5.489260054359086780e+02 2.939556852845666413e+01
5.490260054359087007e+02 2.925033707981532416e+01
5.491260054359087235e+02 2.909622790254543290e+01
5.492260054359087462e+02 2.893405709554449601e+01
5.493260054359087690e+02 2.876465120106431428e+01
5.494260054359086780e+02 2.858884161876896002e+01
5.495260054359087007e+02 2.840745936911928382e+01
5.496260054359087235e+02 2.822133022156922522e+01
5.497260054359087462e+02 2.803127019528968589e+01
5.498260054359087690e+02 2.783808143337175878e+01
5.499260054359086780e+02 2.764254844583606996e+01
5.500260054359087007e+02 2.744543471236691090e+01
5.501260054359087235e+02 2.724747963252028882e+01
5.502260054359087462e+02 2.704939580918743047e+01
5.503260054359087690e+02 2.685186665023849883e+01
5.504260054359086780e+02 2.665554427338543775e+01
5.505260054359087007e+02 2.646104770020780705e+01
5.506260054359087235e+02 2.626896132676704454e+01
5.507260054359087462e+02 2.607983366006407877e+01
5.508260054359087690e+02 2.589417631153239441e+01
5.509260054359086780e+02 2.571246324057302246e+01
5.510260054359087007e+02 2.553513024261828690e+01
5.511260054359087235e+02 2.536257467717644687e+01
5.512260054359087462e+02 2.519515543162083304e+01
5.513260054359087690e+02 2.503319311605658726e+01
5.514260054359086780e+02 2.487697048339098771e+01
5.515260054359087007e+02 2.472673306677386762e+01
5.516260054359087235e+02 2.458269002394092695e+01
5.517260054359087462e+02 2.444501517481844388e+01
5.518260054359087690e+02 2.431384821520853379e+01
5.519260054359086780e+02 2.418929608568205936e+01
5.520260054359087007e+02 2.407143447119577218e+01
5.521260054359087235e+02 2.396030940366725304e+01
5.522260054359087462e+02 2.385593893702412061e+01

5.523260054359087690e+02 2.375831486231457390e+01
5.524260054359086780e+02 2.366740442951313383e+01
5.525260054359087007e+02 2.358315204282338229e+01
5.526260054359087235e+02 2.350548089765819526e+01
5.527260054359087462e+02 2.343429453009885322e+01
5.528260054359087690e+02 2.336947825346170760e+01
5.529260054359086780e+02 2.331090046153853024e+01
5.530260054359087007e+02 2.325841378396023273e+01
5.531260054359087235e+02 2.321185608575497739e+01
5.532260054359087462e+02 2.317105131026456988e+01
5.533260054359087690e+02 2.313581017186047717e+01
5.534260054359086780e+02 2.310593071205013160e+01
5.535260054359087007e+02 2.308119873926774090e+01
5.536260054359087235e+02 2.306138817860467327e+01
5.537260054359087462e+02 2.304626136266974612e+01
5.538260054359087690e+02 2.303556929844910428e+01
5.539260054359086780e+02 2.302905194727410532e+01
5.540260054359087007e+02 2.302643855568244646e+01
5.541260054359087235e+02 2.302744807402242699e+01
5.542260054359087462e+02 2.303178969711964186e+01
5.543260054359087690e+02 2.303916355729101895e+01
5.544260054359086780e+02 2.304926159460955404e+01
5.545260054359087007e+02 2.306176862281059670e+01
5.546260054359087235e+02 2.307636360185447089e+01
5.547260054359087462e+02 2.309272112022451751e+01
5.548260054359087690e+02 2.311051308187090925e+01
5.549260054359086780e+02 2.312941058464604893e+01
5.550260054359087007e+02 2.314908596944404096e+01
5.551260054359087235e+02 2.316921501236237901e+01
5.552260054359087462e+02 2.318947922631913983e+01
5.553260054359087690e+02 2.320956823390718426e+01
5.554260054359086780e+02 2.322918217001434371e+01
5.555260054359087007e+02 2.324803407098931274e+01
5.556260054359087235e+02 2.326585220692131628e+01
5.557260054359087462e+02 2.328238231489765653e+01
5.558260054359087690e+02 2.329738969381110891e+01
5.559260054359086780e+02 2.331066112525208212e+01
5.560260054359087007e+02 2.332200659003911625e+01
5.561260054359087235e+02 2.333126075576653946e+01
5.562260054359087462e+02 2.333828421711431389e+01
5.563260054359087690e+02 2.334296447728723223e+01
5.564260054359086780e+02 2.334521666554350361e+01
5.565260054359087007e+02 2.334498399207222974e+01
5.566260054359087235e+02 2.334223794723432732e+01
5.567260054359087462e+02 2.333697825719412222e+01
5.568260054359087690e+02 2.332923261206914844e+01

5.569260054359086780e+02 2.331905618581090422e+01
5.570260054359087007e+02 2.330653096903807153e+01
5.571260054359087235e+02 2.329176493698102490e+01
5.572260054359087462e+02 2.327489107461014228e+01
5.573260054359087690e+02 2.325606628001424525e+01
5.574260054359086780e+02 2.323547016530861242e+01
5.575260054359087007e+02 2.321330377195662464e+01
5.576260054359087235e+02 2.318978821457872641e+01
5.577260054359087462e+02 2.316516326429847439e+01
5.578260054359087690e+02 2.313968587964056667e+01
5.579260054359086780e+02 2.311362869013624532e+01
5.580260054359087007e+02 2.308727843527465495e+01
5.581260054359087235e+02 2.306093435939984460e+01
5.582260054359087462e+02 2.303490656169147144e+01
5.583260054359087690e+02 2.300951429954009697e+01
5.584260054359086780e+02 2.298508424345492429e+01
5.585260054359087007e+02 2.296194868209530426e+01
5.586260054359087235e+02 2.294044367703865461e+01
5.587260054359087462e+02 2.292090716839206976e+01
5.588260054359087690e+02 2.290367703420408674e+01
5.589260054359086780e+02 2.288908910870295443e+01
5.590260054359087007e+02 2.287747516653537616e+01
5.591260054359087235e+02 2.286916088226536203e+01
5.592260054359087462e+02 2.286446377628598015e+01
5.593260054359087690e+02 2.286369115988772549e+01
5.594260054359086780e+02 2.286713809342798243e+01
5.595260054359087007e+02 2.287508537230307937e+01
5.596260054359087235e+02 2.288779755571133023e+01
5.597260054359087462e+02 2.290552105302410624e+01
5.598260054359087690e+02 2.292848228199247984e+01
5.599260054359086780e+02 2.295688591207872875e+01
5.600260054359087007e+02 2.299091320500603786e+01
5.601260054359087235e+02 2.303072046327526579e+01
5.602260054359087462e+02 2.307643759601674915e+01
5.603260054359087690e+02 2.312816681024571608e+01
5.604260054359086780e+02 2.318598143447547955e+01
5.605260054359087007e+02 2.324992488080190611e+01
5.606260054359087235e+02 2.332000975107343876e+01
5.607260054359087462e+02 2.339621709263649407e+01
5.608260054359087690e+02 2.347849580940228975e+01
5.609260054359086780e+02 2.356676223458822506e+01
5.610260054359087007e+02 2.366089987237955228e+01
5.611260054359087235e+02 2.376075931684424347e+01
5.612260054359087462e+02 2.386615835759388915e+01
5.613260054359087690e+02 2.397688228277896627e+01
5.614260054359086780e+02 2.409268439088926783e+01

5.615260054359087007e+02 2.421328672334668397e+01
5.616260054359087235e+02 2.433838102988718788e+01
5.617260054359087462e+02 2.446762997810341034e+01
5.618260054359087690e+02 2.460066861716040165e+01
5.619260054359086780e+02 2.473710610353695927e+01
5.620260054359087007e+02 2.487652769365856642e+01
5.621260054359087235e+02 2.501849700449240288e+01
5.622260054359087462e+02 2.516255853863021485e+01
5.623260054359087690e+02 2.530824046520571713e+01
5.624260054359086780e+02 2.545505764232018819e+01
5.625260054359087007e+02 2.560251486067785365e+01
5.626260054359087235e+02 2.575011028206829877e+01
5.627260054359087462e+02 2.589733904041440837e+01
5.628260054359087690e+02 2.604369696757065711e+01
5.629260054359086780e+02 2.618868440114445661e+01
5.630260054359087007e+02 2.633181002754836797e+01
5.631260054359087235e+02 2.647259471046469770e+01
5.632260054359087462e+02 2.661057525307988314e+01
5.633260054359087690e+02 2.674530804193406652e+01
5.634260054359086780e+02 2.687637252109655250e+01
5.635260054359087007e+02 2.700337444762127603e+01
5.636260054359087235e+02 2.712594888281366678e+01
5.637260054359087462e+02 2.724376287863636747e+01
5.638260054359087690e+02 2.735651782444303493e+01
5.639260054359086780e+02 2.746395142595192240e+01
5.640260054359087007e+02 2.756583929571298341e+01
5.641260054359087235e+02 2.766199614202363932e+01
5.642260054359087462e+02 2.775227655103037350e+01
5.643260054359087690e+02 2.783657536434035507e+01
5.644260054359086780e+02 2.791482766159589346e+01
5.645260054359087007e+02 2.798700836389597413e+01
5.646260054359087235e+02 2.805313147947926922e+01
5.647260054359087462e+02 2.811324901755463657e+01
5.648260054359087690e+02 2.816744959946736060e+01
5.649260054359086780e+02 2.821585679847376582e+01
5.650260054359087007e+02 2.825862724026218942e+01
5.651260054359087235e+02 2.829594849606806406e+01
5.652260054359087462e+02 2.832803679889309478e+01
5.653260054359087690e+02 2.835513461111070299e+01
5.654260054359086780e+02 2.837750806881001608e+01
5.655260054359087007e+02 2.839544432482478697e+01
5.656260054359087235e+02 2.840924880873885883e+01
5.657260054359087462e+02 2.841924241849986643e+01
5.658260054359087690e+02 2.842575865483943431e+01
5.659260054359086780e+02 2.842914070670302351e+01
5.660260054359087007e+02 2.842973849352527083e+01

5.661260054359087235e+02 2.842790566859732593e+01
5.662260054359087462e+02 2.842399658706918686e+01
5.663260054359087690e+02 2.841836324237725009e+01
5.664260054359086780e+02 2.841135217609812713e+01
5.665260054359087007e+02 2.840330136836732677e+01
5.666260054359087235e+02 2.839453711898980259e+01
5.667260054359087462e+02 2.838537093307555637e+01
5.668260054359087690e+02 2.837609642930386400e+01
5.669260054359086780e+02 2.836698629355336010e+01
5.670260054359087007e+02 2.835828930542125903e+01
5.671260054359087235e+02 2.835022746985836761e+01
5.672260054359087462e+02 2.834299329053177985e+01
5.673260054359087690e+02 2.833674722536026991e+01
5.674260054359086780e+02 2.833161536772264810e+01
5.675260054359087007e+02 2.832768739891630716e+01
5.676260054359087235e+02 2.832501485836312582e+01
5.677260054359087462e+02 2.832360977767765320e+01
5.678260054359087690e+02 2.832344372292817525e+01
5.679260054359086780e+02 2.832444728616552609e+01
5.680260054359087007e+02 2.832651006255979809e+01
5.681260054359087235e+02 2.832948114329635558e+01
5.682260054359087462e+02 2.833317014682722501e+01
5.683260054359087690e+02 2.833734880227694930e+01
5.684260054359086780e+02 2.834175308893977530e+01
5.685260054359087007e+02 2.834608592509726677e+01
5.686260054359087235e+02 2.835002038808303482e+01
5.687260054359087462e+02 2.835320343591638093e+01
5.688260054359087690e+02 2.835526008922696661e+01
5.689260054359086780e+02 2.835579802092864554e+01
5.690260054359087007e+02 2.835441249050461465e+01
5.691260054359087235e+02 2.835069155017301057e+01
5.692260054359087462e+02 2.834422144192427595e+01
5.693260054359087690e+02 2.833459209776028587e+01
5.694260054359086780e+02 2.832140265066875529e+01
5.695260054359087007e+02 2.830426686115700363e+01
5.696260054359087235e+02 2.828281836369875890e+01
5.697260054359087462e+02 2.825671563931554431e+01
5.698260054359087690e+02 2.822564662474633224e+01
5.699260054359086780e+02 2.818933287521149111e+01
5.700260054359087007e+02 2.814753320652951629e+01
5.701260054359087235e+02 2.810004675310332090e+01
5.702260054359087462e+02 2.804671539079649989e+01
5.703260054359087690e+02 2.798742548763785010e+01
5.704260054359086780e+02 2.792210896024838718e+01
5.705260054359087007e+02 2.785074362944824600e+01
5.706260054359087235e+02 2.777335288422283810e+01

5.707260054359087462e+02 2.769000467863570236e+01
5.708260054359087690e+02 2.760080990090576591e+01
5.709260054359086780e+02 2.750592016727088307e+01
5.710260054359087007e+02 2.740552510502631023e+01
5.711260054359087235e+02 2.729984919889781736e+01
5.712260054359087462e+02 2.718914828238706605e+01
5.713260054359087690e+02 2.707370576070021073e+01
5.714260054359086780e+02 2.695382865420510399e+01
5.715260054359087007e+02 2.682984355102558283e+01
5.716260054359087235e+02 2.670209255442785690e+01
5.717260054359087462e+02 2.657092930523786833e+01
5.718260054359087690e+02 2.643671515188707133e+01
5.719260054359086780e+02 2.629981553113474746e+01
5.720260054359087007e+02 2.616059661144373649e+01
5.721260054359087235e+02 2.601942223882284111e+01
5.722260054359087462e+02 2.587665121216689101e+01
5.723260054359087690e+02 2.573263490219956751e+01
5.724260054359086780e+02 2.558771521553577699e+01
5.725260054359087007e+02 2.544222289357939104e+01
5.726260054359087235e+02 2.529647612536558654e+01
5.727260054359087462e+02 2.515077944439772395e+01
5.728260054359087690e+02 2.500542287228881833e+01
5.729260054359086780e+02 2.486068126679449364e+01
5.730260054359087007e+02 2.471681382871845045e+01
5.731260054359087235e+02 2.457406372119675098e+01
5.732260054359087462e+02 2.443265775594195688e+01
5.733260054359087690e+02 2.429280610399260354e+01
5.734260054359086780e+02 2.415470199312367328e+01
5.735260054359087007e+02 2.401852136003434168e+01
5.736260054359087235e+02 2.388442243238712592e+01
5.737260054359087462e+02 2.375254522335370666e+01
5.738260054359087690e+02 2.362301092913900646e+01
5.739260054359086780e+02 2.349592122762308577e+01
5.740260054359087007e+02 2.337135748343123254e+01
5.741260054359087235e+02 2.324937987109836968e+01
5.742260054359087462e+02 2.313002643328391628e+01
5.743260054359087690e+02 2.301331209502634323e+01
5.744260054359086780e+02 2.289922765769119906e+01
5.745260054359087007e+02 2.278773879752910503e+01
5.746260054359087235e+02 2.267878509366475015e+01
5.747260054359087462e+02 2.257227910900575552e+01
5.748260054359087690e+02 2.246810554517724512e+01
5.749260054359086780e+02 2.236612048939828057e+01
5.750260054359087007e+02 2.226615076750417899e+01
5.751260054359087235e+02 2.216799341339771345e+01
5.752260054359087462e+02 2.207141526140193122e+01

5.753260054359087690e+02 2.197615266460229577e+01
5.754260054359086780e+02 2.188191133959220736e+01
5.755260054359087007e+02 2.178836633632074538e+01
5.756260054359087235e+02 2.169516213117225334e+01
5.757260054359087462e+02 2.160191284210772267e+01
5.758260054359087690e+02 2.150820256671074304e+01
5.759260054359086780e+02 2.141358584727005265e+01
5.760260054359087007e+02 2.131758827147547208e+01
5.761260054359087235e+02 2.121970722270226517e+01
5.762260054359087462e+02 2.111941279993516929e+01
5.763260054359087690e+02 2.101614893379503002e+01
5.764260054359086780e+02 2.090933473148678701e+01
5.765260054359087007e+02 2.079836608935747222e+01
5.766260054359087235e+02 2.068261761669302601e+01
5.767260054359087462e+02 2.056144491794930218e+01
5.768260054359087690e+02 2.043418728238793136e+01
5.769260054359086780e+02 2.030017082969639830e+01
5.770260054359087007e+02 2.015871215730573240e+01
5.771260054359087235e+02 2.000912252955149384e+01
5.772260054359087462e+02 1.985071264042762351e+01
5.773260054359087690e+02 1.968279797044411694e+01
5.774260054359086780e+02 1.950470474412235689e+01
5.775260054359087007e+02 1.931577647818134480e+01
5.776260054359087235e+02 1.911538109183625522e+01
5.777260054359087462e+02 1.890291853032731240e+01
5.778260054359087690e+02 1.867782883140408501e+01
5.779260054359086780e+02 1.843960054268607962e+01
5.780260054359087007e+02 1.818777937635463715e+01
5.781260054359087235e+02 1.792197696729992273e+01
5.782260054359087462e+02 1.764187958246628085e+01
5.783260054359087690e+02 1.734725661351473747e+01
5.784260054359086780e+02 1.703796867281243266e+01
5.785260054359087007e+02 1.671397510485312665e+01
5.786260054359087235e+02 1.637534072208772429e+01
5.787260054359087462e+02 1.602224157624572243e+01
5.788260054359087690e+02 1.565496958384297699e+01
5.789260054359086780e+02 1.527393583780630770e+01
5.790260054359087007e+02 1.487967245592071919e+01
5.791260054359087235e+02 1.447283284083944288e+01
5.792260054359087462e+02 1.405419025521873522e+01
5.793260054359087690e+02 1.362463464848984174e+01
5.794260054359086780e+02 1.318516770803088356e+01
5.795260054359087007e+02 1.273689614608581877e+01
5.796260054359087235e+02 1.228102327360978840e+01
5.797260054359087462e+02 1.181883895214504498e+01
5.798260054359087690e+02 1.135170805365570423e+01

5.799260054359086780e+02 1.088105759478458268e+01
5.800260054359087007e+02 1.040836274511051762e+01

IS CO

5.281308276153671386e+02 6.206343348608417155e-14
5.282308276153671613e+02 2.305700306615166955e-13
5.283308276153671841e+02 7.551343003159534012e-13
5.284308276153670931e+02 2.320723155334775377e-12
5.285308276153671159e+02 6.860727925376789254e-12
5.286308276153671386e+02 1.984892175800998165e-11
5.287308276153671613e+02 5.642947532532780840e-11
5.288308276153671841e+02 1.584552361274877168e-10
5.289308276153670931e+02 4.420380319338440147e-10
5.290308276153671159e+02 1.228639230881515099e-09
5.291308276153671386e+02 3.394878165170078012e-09
5.292308276153671613e+02 9.279637771863436308e-09
5.293308276153671841e+02 2.501919286974227997e-08
5.294308276153670931e+02 6.663484355796720485e-08
5.295308276153671159e+02 1.762014817773948500e-07
5.296308276153671386e+02 4.651279085435843119e-07
5.297308276153671613e+02 1.228868037930119459e-06
5.298308276153671841e+02 3.244822671231497085e-06
5.299308276153670931e+02 8.537841746489282911e-06
5.300308276153671159e+02 2.238495046085404495e-05
5.301308276153671386e+02 5.878974783453172942e-05
5.302308276153671613e+02 1.559327952171449109e-04
5.303308276153671841e+02 4.201686532163727630e-04
5.304308276153670931e+02 1.151043871951079947e-03
5.305308276153671159e+02 3.196414482056735094e-03
5.306308276153671386e+02 8.961767293775726659e-03
5.307308276153671613e+02 2.526665075041311520e-02
5.308308276153671841e+02 7.132442702761887521e-02
5.309308276153670931e+02 2.004453843973931781e-01
5.310308276153671159e+02 5.558125201520612846e-01
5.311308276153671386e+02 1.495628253380692163e+00
5.312308276153671613e+02 3.779314362258854310e+00
5.313308276153671841e+02 8.441521553861411675e+00
5.314308276153670931e+02 1.536503902398049703e+01
5.315308276153671159e+02 2.189529330801187257e+01
5.316308276153671386e+02 2.583018006188114413e+01
5.317308276153671613e+02 2.773769190752729230e+01
5.318308276153671841e+02 2.885760862594296938e+01
5.319308276153670931e+02 2.979452264655571980e+01
5.320308276153671159e+02 3.070581208909336723e+01
5.321308276153671386e+02 3.164534148786546552e+01
5.322308276153671613e+02 3.270283813422877728e+01

5.323308276153671841e+02 3.401326084267009264e+01
5.324308276153670931e+02 3.573570915419801963e+01
5.325308276153671159e+02 3.802131099202696163e+01
5.326308276153671386e+02 4.097173002714393419e+01
5.327308276153671613e+02 4.468126710944091684e+01
5.328308276153671841e+02 4.941173149269165066e+01
5.329308276153670931e+02 5.560235486866806554e+01
5.330308276153671159e+02 6.343577289943587516e+01
5.331308276153671386e+02 7.257643536362590453e+01
5.332308276153671613e+02 8.268411035377270935e+01
5.333308276153671841e+02 9.366115295450025258e+01
5.334308276153670931e+02 1.049080346955451120e+02
5.335308276153671159e+02 1.149585908431266006e+02
5.336308276153671386e+02 1.222430358668877943e+02
5.337308276153671613e+02 1.259279908485007269e+02
5.338308276153671841e+02 1.260810031130737912e+02
5.339308276153670931e+02 1.233571347819468116e+02
5.340308276153671159e+02 1.185826335451161242e+02
5.341308276153671386e+02 1.124553541211025305e+02
5.342308276153671613e+02 1.054385532013280198e+02
5.343308276153671841e+02 9.781109625937203589e+01
5.344308276153670931e+02 8.977940881840008558e+01
5.345308276153671159e+02 8.156625905821978506e+01
5.346308276153671386e+02 7.343812061405361646e+01
5.347308276153671613e+02 6.567819747388381302e+01
5.348308276153671841e+02 5.853556405534565954e+01
5.349308276153670931e+02 5.218119691962614581e+01
5.350308276153671159e+02 4.668850072424203290e+01
5.351308276153671386e+02 4.204036459965578842e+01
5.352308276153671613e+02 3.815419557934970385e+01
5.353308276153671841e+02 3.491300152407214341e+01
5.354308276153670931e+02 3.219281164808801776e+01
5.355308276153671159e+02 2.988136813581790463e+01
5.356308276153671386e+02 2.788737997276120240e+01
5.357308276153671613e+02 2.614232905589241440e+01
5.358308276153671841e+02 2.459774141652954071e+01
5.359308276153670931e+02 2.322054565944142723e+01
5.360308276153671159e+02 2.198832078120934241e+01
5.361308276153671386e+02 2.088538250026385867e+01
5.362308276153671613e+02 1.990001200254155833e+01
5.363308276153671841e+02 1.902274420918970321e+01
5.364308276153670931e+02 1.824545854570737546e+01
5.365308276153671159e+02 1.756098124454322829e+01
5.366308276153671386e+02 1.696295030178945140e+01
5.367308276153671613e+02 1.644576691363993959e+01
5.368308276153671841e+02 1.600453243723312724e+01

5.369308276153670931e+02 1.563493230250903565e+01
5.370308276153671159e+02 1.533307122349193286e+01
5.371308276153671386e+02 1.509528680828602987e+01
5.372308276153671613e+02 1.491797439683341153e+01
5.373308276153671841e+02 1.479744992672557657e+01
5.374308276153670931e+02 1.472986564382282459e+01
5.375308276153671159e+02 1.471118060614093714e+01
5.376308276153671386e+02 1.473717770476002187e+01
5.377308276153671613e+02 1.480351306234913622e+01
5.378308276153671841e+02 1.490578227769778508e+01
5.379308276153670931e+02 1.503959006516236840e+01
5.380308276153671159e+02 1.520061388247821377e+01
5.381308276153671386e+02 1.538465665375019675e+01
5.382308276153671613e+02 1.558768754506558096e+01
5.383308276153671841e+02 1.580587231991411556e+01
5.384308276153670931e+02 1.603559596535102116e+01
5.385308276153671159e+02 1.627348027608384839e+01
5.386308276153671386e+02 1.651639834231441029e+01
5.387308276153671613e+02 1.676148686880530647e+01
5.388308276153671841e+02 1.700615633244817460e+01
5.389308276153670931e+02 1.724809839376799658e+01
5.390308276153671159e+02 1.748528979145063289e+01
5.391308276153671386e+02 1.771599212093279618e+01
5.392308276153671613e+02 1.793874730422105657e+01
5.393308276153671841e+02 1.815236904735849777e+01
5.394308276153670931e+02 1.835593101746463418e+01
5.395308276153671159e+02 1.854875275673687440e+01
5.396308276153671386e+02 1.873038444113386447e+01
5.397308276153671613e+02 1.890059149023518259e+01
5.398308276153671841e+02 1.905933978277132113e+01
5.399308276153670931e+02 1.920678189189846563e+01
5.400308276153671159e+02 1.934324439362471892e+01
5.401308276153671386e+02 1.946921598182849067e+01
5.402308276153671613e+02 1.958533588903232214e+01
5.403308276153671841e+02 1.969238198839302711e+01
5.404308276153670931e+02 1.979125794402616734e+01
5.405308276153671159e+02 1.988297887153285615e+01
5.406308276153671386e+02 1.996865514403941688e+01
5.407308276153671613e+02 2.004947420022670457e+01
5.408308276153671841e+02 2.012668044747278984e+01
5.409308276153670931e+02 2.020155357616637559e+01
5.410308276153671159e+02 2.027538578734483110e+01
5.411308276153671386e+02 2.034945856963430089e+01
5.412308276153671613e+02 2.042501973560164430e+01
5.413308276153671841e+02 2.050326144198703204e+01
5.414308276153670931e+02 2.058529987872591960e+01

5.415308276153671159e+02 2.067215722821762824e+01
5.416308276153671386e+02 2.076474638130748218e+01
5.417308276153671613e+02 2.086385876290020036e+01
5.418308276153671841e+02 2.097015548023740195e+01
5.419308276153670931e+02 2.108416187110297813e+01
5.420308276153671159e+02 2.120626540567066343e+01
5.421308276153671386e+02 2.133671678988858389e+01
5.422308276153671613e+02 2.147563403322124032e+01
5.423308276153671841e+02 2.162300918005570338e+01
5.424308276153670931e+02 2.177871736119013946e+01
5.425308276153671159e+02 2.194252779736390835e+01
5.426308276153671386e+02 2.211411637781291262e+01
5.427308276153671613e+02 2.229307944007199183e+01
5.428308276153671841e+02 2.247894838948013074e+01
5.429308276153670931e+02 2.267120481516441544e+01
5.430308276153671159e+02 2.286929578126200013e+01
5.431308276153671386e+02 2.307264899592887630e+01
5.432308276153671613e+02 2.328068758500626956e+01
5.433308276153671841e+02 2.349284422132693351e+01
5.434308276153670931e+02 2.370857438426566333e+01
5.435308276153671159e+02 2.392736854732940799e+01
5.436308276153671386e+02 2.414876311465199166e+01
5.437308276153671613e+02 2.437234995062985377e+01
5.438308276153671841e+02 2.459778437106770710e+01
5.439308276153670931e+02 2.482479148949273196e+01
5.440308276153671159e+02 2.505317083901615050e+01
5.441308276153671386e+02 2.528279921838224453e+01
5.442308276153671613e+02 2.551363174056258387e+01
5.443308276153671841e+02 2.574570109315123290e+01
5.444308276153670931e+02 2.597911505143643751e+01
5.445308276153671159e+02 2.621405231675187508e+01
5.446308276153671386e+02 2.645075678381567030e+01
5.447308276153671613e+02 2.668953037044310861e+01
5.448308276153671841e+02 2.693072457044204526e+01
5.449308276153670931e+02 2.717473091486221293e+01
5.450308276153671159e+02 2.742197054733200545e+01
5.451308276153671386e+02 2.767288313535151190e+01
5.452308276153671613e+02 2.792791535062346497e+01
5.453308276153671841e+02 2.818750915746492325e+01
5.454308276153670931e+02 2.845209014889642418e+01
5.455308276153671159e+02 2.872205616516822246e+01
5.456308276153671386e+02 2.899776641945016564e+01
5.457308276153671613e+02 2.927953134052791384e+01
5.458308276153671841e+02 2.956760332310104644e+01
5.459308276153670931e+02 2.986216855326265573e+01
5.460308276153671159e+02 3.016334005064085133e+01

5.461308276153671386e+02 3.047115204023436874e+01
5.462308276153671613e+02 3.078555573694296754e+01
5.463308276153671841e+02 3.110641659494456235e+01
5.464308276153670931e+02 3.143351304314879613e+01
5.465308276153671159e+02 3.176653669765825683e+01
5.466308276153671386e+02 3.210509401314209299e+01
5.467308276153671613e+02 3.244870930784277618e+01
5.468308276153671841e+02 3.279682907208913889e+01
5.469308276153670931e+02 3.314882744809993653e+01
5.470308276153671159e+02 3.350401274985540567e+01
5.471308276153671386e+02 3.386163487615016265e+01
5.472308276153671613e+02 3.422089345778244507e+01
5.473308276153671841e+02 3.458094657128911109e+01
5.474308276153670931e+02 3.494091984672208895e+01
5.475308276153671159e+02 3.529991579564715209e+01
5.476308276153671386e+02 3.565702318772343915e+01
5.477308276153671613e+02 3.601132630974031201e+01
5.478308276153671841e+02 3.636191394962701651e+01
5.479308276153670931e+02 3.670788795945602345e+01
5.480308276153671159e+02 3.704837126551741733e+01
5.481308276153671386e+02 3.738251520980726639e+01
5.482308276153671613e+02 3.770950612535692414e+01
5.483308276153671841e+02 3.802857106731833881e+01
5.484308276153670931e+02 3.833898264217445728e+01
5.485308276153671159e+02 3.864006289840513375e+01
5.486308276153671386e+02 3.893118626294506868e+01
5.487308276153671613e+02 3.921178152836473174e+01
5.488308276153671841e+02 3.948133291543210532e+01
5.489308276153670931e+02 3.973938025415655773e+01
5.490308276153671159e+02 3.998551834317737530e+01
5.491308276153671386e+02 4.021939556209831323e+01
5.492308276153671613e+02 4.044071182378592511e+01
5.493308276153671841e+02 4.064921596351547350e+01
5.494308276153670931e+02 4.084470266899342761e+01
5.495308276153671159e+02 4.102700905962183242e+01
5.496308276153671386e+02 4.119601102487014543e+01
5.497308276153671613e+02 4.135161943034733412e+01
5.498308276153671841e+02 4.149377629624044062e+01
5.499308276153670931e+02 4.162245104640405202e+01
5.500308276153671159e+02 4.173763691780442286e+01
5.501308276153671386e+02 4.183934760954869603e+01
5.502308276153671613e+02 4.192761423872184423e+01
5.503308276153671841e+02 4.200248265709382878e+01
5.504308276153670931e+02 4.206401116885994185e+01
5.505308276153671159e+02 4.211226867535148699e+01
5.506308276153671386e+02 4.214733325852306223e+01

5.507308276153671613e+02 4.216929120138264153e+01
5.508308276153671841e+02 4.217823643076197726e+01
5.509308276153670931e+02 4.217427035626233334e+01
5.510308276153671159e+02 4.215750206915195974e+01
5.511308276153671386e+02 4.212804885667417665e+01
5.512308276153671613e+02 4.208603698082835365e+01
5.513308276153671841e+02 4.203160266632410469e+01
5.514308276153670931e+02 4.196489324012596711e+01
5.515308276153671159e+02 4.188606836477766393e+01
5.516308276153671386e+02 4.179530130942331567e+01
5.517308276153671613e+02 4.169278020597299417e+01
5.518308276153671841e+02 4.157870924296398130e+01
5.519308276153670931e+02 4.145330975607417656e+01
5.520308276153671159e+02 4.131682118163196549e+01
5.521308276153671386e+02 4.116950184748041153e+01
5.522308276153671613e+02 4.101162958382355583e+01
5.523308276153671841e+02 4.084350214482797981e+01
5.524308276153670931e+02 4.066543743940453481e+01
5.525308276153671159e+02 4.047777357640562457e+01
5.526308276153671386e+02 4.028086873514106969e+01
5.527308276153671613e+02 4.007510087638237906e+01
5.528308276153671841e+02 3.986086731170979647e+01
5.529308276153670931e+02 3.963858415004659008e+01
5.530308276153671159e+02 3.940868563949530312e+01
5.531308276153671386e+02 3.917162342020486676e+01
5.532308276153671613e+02 3.892786570010188996e+01
5.533308276153671841e+02 3.867789636015317711e+01
5.534308276153670931e+02 3.842221398969596891e+01
5.535308276153671159e+02 3.816133084565078093e+01
5.536308276153671386e+02 3.789577172254840320e+01
5.537308276153671613e+02 3.762607271369527240e+01
5.538308276153671841e+02 3.735277983794655654e+01
5.539308276153670931e+02 3.707644750188363503e+01
5.540308276153671159e+02 3.679763676411856466e+01
5.541308276153671386e+02 3.651691336732006476e+01
5.542308276153671613e+02 3.623484550463706455e+01
5.543308276153671841e+02 3.595200129066567740e+01
5.544308276153670931e+02 3.566894591301854689e+01
5.545308276153671159e+02 3.538623844886010517e+01
5.546308276153671386e+02 3.510442834128632228e+01
5.547308276153671613e+02 3.482405154285761029e+01
5.548308276153671841e+02 3.454562634753344241e+01
5.549308276153670931e+02 3.426964894720473609e+01
5.550308276153671159e+02 3.399658876439649191e+01
5.551308276153671386e+02 3.372688362789359928e+01
5.552308276153671613e+02 3.346093487236621655e+01

5.553308276153671841e+02 3.319910245589128550e+01
5.554308276153670931e+02 3.294170019996160192e+01
5.555308276153671159e+02 3.268899126458765636e+01
5.556308276153671386e+02 3.244118397596041348e+01
5.557308276153671613e+02 3.219842812549594413e+01
5.558308276153671841e+02 3.196081185669622826e+01
5.559308276153670931e+02 3.172835925004498847e+01
5.560308276153671159e+02 3.150102870617442363e+01
5.561308276153671386e+02 3.127871221399327695e+01
5.562308276153671613e+02 3.106123557370864319e+01
5.563308276153671841e+02 3.084835962517923846e+01
5.564308276153670931e+02 3.063978251039222300e+01
5.565308276153671159e+02 3.043514297572994565e+01
5.566308276153671386e+02 3.023402469581758822e+01
5.567308276153671613e+02 3.003596157687844226e+01
5.568308276153671841e+02 2.984044397442454866e+01
5.569308276153670931e+02 2.964692573850837576e+01
5.570308276153671159e+02 2.945483198031799077e+01
5.571308276153671386e+02 2.926356743719979647e+01
5.572308276153671613e+02 2.907252529971265886e+01
5.573308276153671841e+02 2.888109635441087875e+01
5.574308276153670931e+02 2.868867828994076064e+01
5.575308276153671159e+02 2.849468501180378865e+01
5.576308276153671386e+02 2.829855581273248433e+01
5.577308276153671613e+02 2.809976425086944829e+01
5.578308276153671841e+02 2.789782659653236863e+01
5.579308276153670931e+02 2.769230971989716039e+01
5.580308276153671159e+02 2.748283830595689636e+01
5.581308276153671386e+02 2.726910129908481295e+01
5.582308276153671613e+02 2.705085749687288654e+01
5.583308276153671841e+02 2.682794023105819292e+01
5.584308276153670931e+02 2.660026109171650788e+01
5.585308276153671159e+02 2.636781266896554143e+01
5.586308276153671386e+02 2.613067030369208155e+01
5.587308276153671613e+02 2.588899285488612634e+01
5.588308276153671841e+02 2.564302250568291441e+01
5.589308276153670931e+02 2.539308364293184539e+01
5.590308276153671159e+02 2.513958085584993540e+01
5.591308276153671386e+02 2.488299610800019224e+01
5.592308276153671613e+02 2.462388514344969792e+01
5.593308276153671841e+02 2.436287319258433826e+01
5.594308276153670931e+02 2.410065004581491621e+01
5.595308276153671159e+02 2.383796456449314860e+01
5.596308276153671386e+02 2.357561869798870191e+01
5.597308276153671613e+02 2.331446107431503023e+01
5.598308276153671841e+02 2.305538022920042351e+01

5.599308276153670931e+02 2.279929753535351011e+01
5.600308276153671159e+02 2.254715989013302391e+01
5.601308276153671386e+02 2.229993221614867593e+01
5.602308276153671613e+02 2.205858982571781723e+01
5.603308276153671841e+02 2.182411069677597482e+01
5.604308276153670931e+02 2.159746770494803769e+01
5.605308276153671159e+02 2.137962085416051039e+01
5.606308276153671386e+02 2.117150954649618200e+01
5.607308276153671613e+02 2.097404493101852196e+01
5.608308276153671841e+02 2.078810237103422764e+01
5.609308276153670931e+02 2.061451406970483191e+01
5.610308276153671159e+02 2.045406189500641503e+01
5.611308276153671386e+02 2.030747044669547918e+01
5.612308276153671613e+02 2.017540041005635487e+01
5.613308276153671841e+02 2.005844224365397110e+01
5.614308276153670931e+02 1.995711025094233193e+01
5.615308276153671159e+02 1.987183708821271466e+01
5.616308276153671386e+02 1.980296876382447024e+01
5.617308276153671613e+02 1.975076018575025927e+01
5.618308276153671841e+02 1.971537131598651627e+01
5.619308276153670931e+02 1.969686399112794106e+01
5.620308276153671159e+02 1.969519946818518719e+01
5.621308276153671386e+02 1.971023675335027292e+01
5.622308276153671613e+02 1.974173176871481417e+01
5.623308276153671841e+02 1.978933740777664951e+01
5.624308276153670931e+02 1.985260452481293925e+01
5.625308276153671159e+02 1.993098389577608742e+01
5.626308276153671386e+02 2.002382917924810002e+01
5.627308276153671613e+02 2.013040089518413822e+01
5.628308276153671841e+02 2.024987142676109997e+01
5.629308276153670931e+02 2.038133103674756796e+01
5.630308276153671159e+02 2.052379487462010133e+01
5.631308276153671386e+02 2.067621093441585245e+01
5.632308276153671613e+02 2.083746890633788595e+01
5.633308276153671841e+02 2.100640984778019771e+01
5.634308276153670931e+02 2.118183658211269460e+01
5.635308276153671159e+02 2.136252471670660213e+01
5.636308276153671386e+02 2.154723415574706991e+01
5.637308276153671613e+02 2.173472096884572125e+01
5.638308276153671841e+02 2.192374946379979406e+01
5.639308276153670931e+02 2.211310430149037387e+01
5.640308276153671159e+02 2.230160248328191841e+01
5.641308276153671386e+02 2.248810503673155736e+01
5.642308276153671613e+02 2.267152822423030045e+01
5.643308276153671841e+02 2.285085410158425390e+01
5.644308276153670931e+02 2.302514025961644606e+01

5.645308276153671159e+02 2.319352859164446556e+01
5.646308276153671386e+02 2.335525294307351629e+01
5.647308276153671613e+02 2.350964551613995823e+01
5.648308276153671841e+02 2.365614192274846062e+01
5.649308276153670931e+02 2.379428480096067133e+01
5.650308276153671159e+02 2.392372593553277937e+01
5.651308276153671386e+02 2.404422684939619259e+01
5.652308276153671613e+02 2.415565786051016417e+01
5.653308276153671841e+02 2.425799562642567864e+01
5.654308276153670931e+02 2.435131922650563752e+01
5.655308276153671159e+02 2.443580485836784533e+01
5.656308276153671386e+02 2.451171925009968433e+01
5.657308276153671613e+02 2.457941191252539781e+01
5.658308276153671841e+02 2.463930637574164706e+01
5.659308276153670931e+02 2.469189057080880545e+01
5.660308276153671159e+02 2.473770653052494595e+01
5.661308276153671386e+02 2.477733959235313677e+01
5.662308276153671613e+02 2.481140729167286452e+01
5.663308276153671841e+02 2.484054813455035315e+01
5.664308276153670931e+02 2.486541043625721414e+01
5.665308276153671159e+02 2.488664140500705813e+01
5.666308276153671386e+02 2.490487664012335856e+01
5.667308276153671613e+02 2.492073020049048182e+01
5.668308276153671841e+02 2.493478538312947279e+01
5.669308276153670931e+02 2.494758633360653022e+01
5.670308276153671159e+02 2.495963059027432962e+01
5.671308276153671386e+02 2.497136264364144154e+01
5.672308276153671613e+02 2.498316857102796718e+01
5.673308276153671841e+02 2.499537178564541051e+01
5.674308276153670931e+02 2.500822991883821800e+01
5.675308276153671159e+02 2.502193283489453535e+01
5.676308276153671386e+02 2.503660175995424453e+01
5.677308276153671613e+02 2.505228949041521957e+01
5.678308276153671841e+02 2.506898163208336783e+01
5.679308276153670931e+02 2.508659880925997143e+01
5.680308276153671159e+02 2.510499977305961039e+01
5.681308276153671386e+02 2.512398533047284133e+01
5.682308276153671613e+02 2.514330300992670075e+01
5.683308276153671841e+02 2.516265237519413489e+01
5.684308276153670931e+02 2.518169089724690224e+01
5.685308276153671159e+02 2.520004029280137559e+01
5.686308276153671386e+02 2.521729323860871830e+01
5.687308276153671613e+02 2.523302037173263557e+01
5.688308276153671841e+02 2.524677748789141418e+01
5.689308276153670931e+02 2.525811285219142377e+01
5.690308276153671159e+02 2.526657453905690431e+01

5.691308276153671386e+02 2.527171772072543376e+01
5.692308276153671613e+02 2.527311182622521102e+01
5.693308276153671841e+02 2.527034749524313284e+01
5.694308276153670931e+02 2.526304325372283444e+01
5.695308276153671159e+02 2.525085184046183073e+01
5.696308276153671386e+02 2.523346611648068460e+01
5.697308276153671613e+02 2.521062449164573138e+01
5.698308276153671841e+02 2.518211580606757138e+01
5.699308276153670931e+02 2.514778360732657347e+01
5.700308276153671159e+02 2.510752976872986864e+01
5.701308276153671386e+02 2.506131739871605646e+01
5.702308276153671613e+02 2.500917299729629661e+01
5.703308276153671841e+02 2.495118782212296793e+01
5.704308276153670931e+02 2.488751843444078915e+01
5.705308276153671159e+02 2.481838640378346383e+01
5.706308276153671386e+02 2.474407715976838062e+01
5.707308276153671613e+02 2.466493798960390293e+01
5.708308276153671841e+02 2.458137519080540656e+01
5.709308276153670931e+02 2.449385039992891322e+01
5.710308276153671159e+02 2.440287612965334318e+01
5.711308276153671386e+02 2.430901055803855471e+01
5.712308276153671613e+02 2.421285162500014110e+01
5.713308276153671841e+02 2.411503050173224594e+01
5.714308276153670931e+02 2.401620450872817258e+01
5.715308276153671159e+02 2.391704956698447759e+01
5.716308276153671386e+02 2.381825227473205331e+01
5.717308276153671613e+02 2.372050170846372197e+01
5.718308276153671841e+02 2.362448105200678583e+01
5.719308276153670931e+02 2.353085916084356910e+01
5.720308276153671159e+02 2.344028217078449217e+01
5.721308276153671386e+02 2.335336526044930849e+01
5.722308276153671613e+02 2.327068467585805323e+01
5.723308276153671841e+02 2.319277012284403838e+01
5.724308276153670931e+02 2.312009762907315036e+01
5.725308276153671159e+02 2.305308297229682069e+01
5.726308276153671386e+02 2.299207576519779295e+01
5.727308276153671613e+02 2.293735427993015108e+01
5.728308276153671841e+02 2.288912108731816630e+01
5.729308276153670931e+02 2.284749957676891796e+01
5.730308276153671159e+02 2.281253141335863432e+01
5.731308276153671386e+02 2.278417497834775318e+01
5.732308276153671613e+02 2.276230482862397864e+01
5.733308276153671841e+02 2.274671219931281740e+01
5.734308276153670931e+02 2.273710656207144254e+01
5.735308276153671159e+02 2.273311823942844256e+01
5.736308276153671386e+02 2.273430206299067891e+01

5.737308276153671613e+02 2.274014205045826031e+01
5.738308276153671841e+02 2.275005706323789667e+01
5.739308276153670931e+02 2.276340739311581984e+01
5.740308276153671159e+02 2.277950221306436873e+01
5.741308276153671386e+02 2.279760781396493030e+01
5.742308276153671613e+02 2.281695653602249507e+01
5.743308276153671841e+02 2.283675629114372541e+01
5.744308276153670931e+02 2.285620056080361806e+01
5.745308276153671159e+02 2.287447874321008001e+01
5.746308276153671386e+02 2.289078671418496214e+01
5.747308276153671613e+02 2.290433745841188795e+01
5.748308276153671841e+02 2.291437162184881871e+01
5.749308276153670931e+02 2.292016783244451972e+01
5.750308276153671159e+02 2.292105263507407287e+01
5.751308276153671386e+02 2.291640988802208767e+01
5.752308276153671613e+02 2.290568947253611043e+01
5.753308276153671841e+02 2.288841517402318004e+01
5.754308276153670931e+02 2.286419160337255363e+01
5.755308276153671159e+02 2.283271003957699818e+01
5.756308276153671386e+02 2.279375309013071060e+01
5.757308276153671613e+02 2.274719808335971649e+01
5.758308276153671841e+02 2.269301912656469256e+01
5.759308276153670931e+02 2.263128778523211793e+01
5.760308276153671159e+02 2.256217236114363800e+01
5.761308276153671386e+02 2.248593577048070458e+01
5.762308276153671613e+02 2.240293204645148606e+01
5.763308276153671841e+02 2.231360151401202785e+01
5.764308276153670931e+02 2.221846470636978310e+01
5.765308276153671159e+02 2.211811511362743943e+01
5.766308276153671386e+02 2.201321087266562415e+01
5.767308276153671613e+02 2.190446552375214750e+01
5.768308276153671841e+02 2.179263797304898631e+01
5.769308276153670931e+02 2.167852181089252639e+01
5.770308276153671159e+02 2.156293414326676583e+01
5.771308276153671386e+02 2.144670409818465018e+01
5.772308276153671613e+02 2.133066116974698190e+01
5.773308276153671841e+02 2.121562356056564624e+01
5.774308276153670931e+02 2.110238667820675573e+01
5.775308276153671159e+02 2.099171193360161425e+01
5.776308276153671386e+02 2.088431597932781614e+01
5.777308276153671613e+02 2.078086051367196774e+01
5.778308276153671841e+02 2.068194276288478761e+01
5.779308276153670931e+02 2.058808673948441381e+01
5.780308276153671159e+02 2.049973535931868440e+01
5.781308276153671386e+02 2.041724348481832152e+01
5.782308276153671613e+02 2.034087194688789779e+01

5.783308276153671841e+02 2.027078258358255169e+01
5.784308276153670931e+02 2.020703432044336623e+01
5.785308276153671159e+02 2.014958030539006728e+01
5.786308276153671386e+02 2.009826610060130747e+01
5.787308276153671613e+02 2.005282892498091485e+01
5.788308276153671841e+02 2.001289793366269265e+01
5.789308276153670931e+02 1.997799551551860020e+01
5.790308276153671159e+02 1.994753958569987873e+01
5.791308276153671386e+02 1.992084684768107650e+01
5.792308276153671613e+02 1.989713699785068002e+01
5.793308276153671841e+02 1.987553784510627963e+01
5.794308276153670931e+02 1.985509131782670877e+01
5.795308276153671159e+02 1.983476033064603428e+01
5.796308276153671386e+02 1.981343648326284779e+01
5.797308276153671613e+02 1.978994856271096836e+01
5.798308276153671841e+02 1.976307181873685082e+01
5.799308276153670931e+02 1.973153797885947824e+01
5.800308276153671159e+02 1.969404596506524285e+01
5.801308276153671386e+02 1.964927326772113503e+01
5.802308276153671613e+02 1.959588792406333368e+01
5.803308276153671841e+02 1.953256103852165637e+01
5.804308276153670931e+02 1.945797977026164460e+01
5.805308276153671159e+02 1.937086069986442638e+01
5.806308276153671386e+02 1.926996347232858753e+01
5.807308276153671613e+02 1.915410459798147613e+01
5.808308276153671841e+02 1.902217127694528287e+01
5.809308276153670931e+02 1.887313509711012571e+01
5.810308276153671159e+02 1.870606544078989231e+01
5.811308276153671386e+02 1.852014242208302619e+01
5.812308276153671613e+02 1.831466916615817553e+01
5.813308276153671841e+02 1.808908323394888029e+01
5.814308276153670931e+02 1.784296699174560530e+01
5.815308276153671159e+02 1.757605672551860820e+01
5.816308276153671386e+02 1.728825030498512660e+01
5.817308276153671613e+02 1.697961321281173852e+01
5.818308276153671841e+02 1.665038277012050116e+01
5.819308276153670931e+02 1.630097041066909824e+01
5.820308276153671159e+02 1.593196188253409140e+01
5.821308276153671386e+02 1.554411528747384708e+01
5.822308276153671613e+02 1.513835690382048682e+01
5.823308276153671841e+02 1.471577477799681866e+01
5.824308276153670931e+02 1.427761011165210547e+01
5.825308276153671159e+02 1.382524651489986844e+01
5.826308276153671386e+02 1.336019724004583331e+01
5.827308276153671613e+02 1.288409055327495878e+01
5.828308276153671841e+02 1.239865344275498238e+01

5.829308276153670931e+02 1.190569389926073463e+01
5.830308276153671159e+02 1.140708203855210456e+01

TS1 CO

5.274132636018068752e+02 1.246378335695624881e-12
5.275132636018068979e+02 4.453222085058268527e-12
5.276132636018069206e+02 1.380479994229350748e-11
5.277132636018068297e+02 3.925254169068493540e-11
5.278132636018068524e+02 1.071696767866865902e-10
5.279132636018068752e+02 2.872109444759949942e-10
5.280132636018068979e+02 7.609755444911622233e-10
5.281132636018069206e+02 1.993514400100709066e-09
5.282132636018068297e+02 5.160732464884557374e-09
5.283132636018068524e+02 1.322851915490559491e-08
5.284132636018068752e+02 3.374603467010964927e-08
5.285132636018068979e+02 8.620210774624305187e-08
5.286132636018069206e+02 2.215668904818006381e-07
5.287132636018068297e+02 5.744802662536062753e-07
5.288132636018068524e+02 1.502549204916350089e-06
5.289132636018068752e+02 3.954386805678941044e-06
5.290132636018068979e+02 1.042580183441602264e-05
5.291132636018069206e+02 2.739893478238808309e-05
5.292132636018068297e+02 7.147698522391387707e-05
5.293132636018068524e+02 1.847817825665549248e-04
5.294132636018068752e+02 4.741303498833441014e-04
5.295132636018068979e+02 1.212966658469080477e-03
5.296132636018069206e+02 3.112298071164268810e-03
5.297132636018068297e+02 8.053721874554827659e-03
5.298132636018068524e+02 2.110135681360883475e-02
5.299132636018068752e+02 5.606456555125626656e-02
5.300132636018068979e+02 1.507758317223746869e-01
5.301132636018069206e+02 4.076640859080231105e-01
5.302132636018068297e+02 1.091145318932022823e+00
5.303132636018068524e+02 2.797253377999351809e+00
5.304132636018068752e+02 6.445048535839296378e+00
5.305132636018068979e+02 1.219550860997448893e+01
5.306132636018069206e+02 1.792963859451499786e+01
5.307132636018068297e+02 2.138808708079503873e+01
5.308132636018068524e+02 2.278007306896046202e+01
5.309132636018068752e+02 2.332168487336453211e+01
5.310132636018068979e+02 2.380645001436245423e+01
5.311132636018069206e+02 2.451388209956612130e+01
5.312132636018068297e+02 2.543507319592639604e+01
5.313132636018068524e+02 2.645294399714039457e+01
5.314132636018068752e+02 2.747497964227441614e+01

5.315132636018068979e+02 2.852284400953335108e+01
5.316132636018069206e+02 2.974021577399720684e+01
5.317132636018068297e+02 3.130635855158069702e+01
5.318132636018068524e+02 3.332376346857719085e+01
5.319132636018068752e+02 3.579334735324483319e+01
5.320132636018068979e+02 3.875372859884996046e+01
5.321132636018069206e+02 4.248885992830436464e+01
5.322132636018068297e+02 4.741519325214870406e+01
5.323132636018068524e+02 5.343231541138324303e+01
5.324132636018068752e+02 5.952876118260464011e+01
5.325132636018068979e+02 6.449225843177693207e+01
5.326132636018069206e+02 6.779269475425617486e+01
5.327132636018068297e+02 6.949023849781491435e+01
5.328132636018068524e+02 6.985139850852564791e+01
5.329132636018068752e+02 6.934219977056626760e+01
5.330132636018068979e+02 6.856013239708872220e+01
5.331132636018069206e+02 6.793200003360132655e+01
5.332132636018068297e+02 6.750961934162947387e+01
5.333132636018068524e+02 6.702176776952953219e+01
5.334132636018068752e+02 6.608044323840636025e+01
5.335132636018068979e+02 6.439228151490834762e+01
5.336132636018069206e+02 6.188229326655177687e+01
5.337132636018068297e+02 5.870592286642317958e+01
5.338132636018068524e+02 5.517645090544271369e+01
5.339132636018068752e+02 5.165787472186467966e+01
5.340132636018068979e+02 4.846981773282173833e+01
5.341132636018069206e+02 4.583097658831422194e+01
5.342132636018068297e+02 4.384472042396902935e+01
5.343132636018068524e+02 4.251495364746317307e+01
5.344132636018068752e+02 4.177555711441124942e+01
5.345132636018068979e+02 4.152002209323327264e+01
5.346132636018069206e+02 4.162435369211021197e+01
5.347132636018068297e+02 4.196195177239341945e+01
5.348132636018068524e+02 4.241226655285647240e+01
5.349132636018068752e+02 4.286576195463180738e+01
5.350132636018068979e+02 4.322712441721439802e+01
5.351132636018069206e+02 4.341770648409279687e+01
5.352132636018068297e+02 4.337745116377809751e+01
5.353132636018068524e+02 4.306616111991903040e+01
5.354132636018068752e+02 4.246388661466487235e+01
5.355132636018068979e+02 4.157027657062993597e+01
5.356132636018069206e+02 4.040286360031542046e+01
5.357132636018068297e+02 3.899438002252303193e+01
5.358132636018068524e+02 3.738930654283723243e+01
5.359132636018068752e+02 3.563993250167632709e+01
5.360132636018068979e+02 3.380225286444144928e+01

5.361132636018069206e+02 3.193203781653348372e+01
5.362132636018068297e+02 3.008138265245702669e+01
5.363132636018068524e+02 2.829598046270892908e+01
5.364132636018068752e+02 2.661326679472640677e+01
5.365132636018068979e+02 2.506147880621107760e+01
5.366132636018069206e+02 2.365956879590224915e+01
5.367132636018068297e+02 2.241782908909595307e+01
5.368132636018068524e+02 2.133903265353146850e+01
5.369132636018068752e+02 2.041987523802279014e+01
5.370132636018068979e+02 1.965251730902591021e+01
5.371132636018069206e+02 1.902605973972562481e+01
5.372132636018068297e+02 1.852783582274672369e+01
5.373132636018068524e+02 1.814445358739525460e+01
5.374132636018068752e+02 1.786256846467578185e+01
5.375132636018068979e+02 1.766940190980238867e+01
5.376132636018069206e+02 1.755304461945829075e+01
5.377132636018068297e+02 1.750259399724875564e+01
5.378132636018068524e+02 1.750817675325450296e+01
5.379132636018068752e+02 1.756090198291684956e+01
5.380132636018068979e+02 1.765278079018730040e+01
5.381132636018069206e+02 1.777663805183680168e+01
5.382132636018068297e+02 1.792603209335532100e+01
5.383132636018068524e+02 1.809518994099433442e+01
5.384132636018068752e+02 1.827895986817740948e+01
5.385132636018068979e+02 1.847277914130235033e+01
5.386132636018069206e+02 1.867265288030721493e+01
5.387132636018068297e+02 1.887513934548275074e+01
5.388132636018068524e+02 1.907733729032078784e+01
5.389132636018068752e+02 1.927687188045526767e+01
5.390132636018068979e+02 1.947187675701763254e+01
5.391132636018069206e+02 1.966097089844106094e+01
5.392132636018068297e+02 1.984322987207494293e+01
5.393132636018068524e+02 2.001815179838090586e+01
5.394132636018068752e+02 2.018561885821785040e+01
5.395132636018068979e+02 2.034585547257039195e+01
5.396132636018069206e+02 2.049938440711427035e+01
5.397132636018068297e+02 2.064698204190025166e+01
5.398132636018068524e+02 2.078963394005396736e+01
5.399132636018068752e+02 2.092849168534925042e+01
5.400132636018068979e+02 2.106483176690047543e+01
5.401132636018069206e+02 2.120001709292435521e+01
5.402132636018068297e+02 2.133546153057919526e+01
5.403132636018068524e+02 2.147259770541727164e+01
5.404132636018068752e+02 2.161284815733704079e+01
5.405132636018068979e+02 2.175759984186170470e+01
5.406132636018069206e+02 2.190818188531311606e+01

5.407132636018068297e+02 2.206584644753731084e+01
5.408132636018068524e+02 2.223175251279671016e+01
5.409132636018068752e+02 2.240695241431168938e+01
5.410132636018068979e+02 2.259238089660165727e+01
5.411132636018069206e+02 2.278884652828091362e+01
5.412132636018068297e+02 2.299702529265356432e+01
5.413132636018068524e+02 2.321745620113296127e+01
5.414132636018068752e+02 2.345053879253018891e+01
5.415132636018068979e+02 2.369653239754715912e+01
5.416132636018069206e+02 2.395555706090443238e+01
5.417132636018068297e+02 2.422759602254004818e+01
5.418132636018068524e+02 2.451249966385905665e+01
5.419132636018068752e+02 2.480999082516969168e+01
5.420132636018068979e+02 2.511967139663566684e+01
5.421132636018069206e+02 2.544103007798947402e+01
5.422132636018068297e+02 2.577345119273368823e+01
5.423132636018068524e+02 2.611622443152776185e+01
5.424132636018068752e+02 2.646855538784565809e+01
5.425132636018068979e+02 2.682957673767685236e+01
5.426132636018069206e+02 2.719835990483018406e+01
5.427132636018068297e+02 2.757392704498310465e+01
5.428132636018068524e+02 2.795526317558512019e+01
5.429132636018068752e+02 2.834132827554130785e+01
5.430132636018068979e+02 2.873106917863459131e+01
5.431132636018069206e+02 2.912343108813818304e+01
5.432132636018068297e+02 2.951736854716930836e+01
5.433132636018068524e+02 2.991185571006980126e+01
5.434132636018068752e+02 3.030589577438679427e+01
5.435132636018068979e+02 3.069852945066532612e+01
5.436132636018069206e+02 3.108884236793081612e+01
5.437132636018068297e+02 3.147597133598463159e+01
5.438132636018068524e+02 3.185910941089883863e+01
5.439132636018068752e+02 3.223750973670458109e+01
5.440132636018068979e+02 3.261048816346843893e+01
5.441132636018069206e+02 3.297742466892601954e+01
5.442132636018068297e+02 3.333776363674853371e+01
5.443132636018068524e+02 3.369101306852459743e+01
5.444132636018068752e+02 3.403674282786070648e+01
5.445132636018068979e+02 3.437458203294584536e+01
5.446132636018069206e+02 3.470421572791618559e+01
5.447132636018068297e+02 3.502538097297856723e+01
5.448132636018068524e+02 3.533786249826345482e+01
5.449132636018068752e+02 3.564148806673044589e+01
5.450132636018068979e+02 3.593612368728032891e+01
5.451132636018069206e+02 3.622166881086101853e+01
5.452132636018068297e+02 3.649805163028465671e+01

5.453132636018068524e+02 3.676522458932556958e+01
5.454132636018068752e+02 3.702316018918880047e+01
5.455132636018068979e+02 3.727184716142719623e+01
5.456132636018069206e+02 3.751128705668213570e+01
5.457132636018068297e+02 3.774149127905258183e+01
5.458132636018068524e+02 3.796247857722884333e+01
5.459132636018068752e+02 3.817427298645490197e+01
5.460132636018068979e+02 3.837690220047613110e+01
5.461132636018069206e+02 3.857039634033283448e+01
5.462132636018068297e+02 3.875478707746214013e+01
5.463132636018068524e+02 3.893010706221458861e+01
5.464132636018068752e+02 3.909638960556345211e+01
5.465132636018068979e+02 3.925366856133635451e+01
5.466132636018069206e+02 3.940197835845355456e+01
5.467132636018068297e+02 3.954135413704257473e+01
5.468132636018068524e+02 3.967183194846033700e+01
5.469132636018068752e+02 3.979344898669467057e+01
5.470132636018068979e+02 3.990624382681018290e+01
5.471132636018069206e+02 4.001025665453894220e+01
5.472132636018068297e+02 4.010552947930233358e+01
5.473132636018068524e+02 4.019210633045445746e+01
5.474132636018068752e+02 4.027003344299266274e+01
5.475132636018068979e+02 4.033935944409600438e+01
5.476132636018069206e+02 4.040013555543017532e+01
5.477132636018068297e+02 4.045241582808553460e+01
5.478132636018068524e+02 4.049625742726984612e+01
5.479132636018068752e+02 4.053172098251781108e+01
5.480132636018068979e+02 4.055887101633793179e+01
5.481132636018069206e+02 4.057777646008540984e+01
5.482132636018068297e+02 4.058851126067277448e+01
5.483132636018068524e+02 4.059115507578023596e+01
5.484132636018068752e+02 4.058579404881041341e+01
5.485132636018068979e+02 4.057252164825037255e+01
5.486132636018069206e+02 4.055143954966570163e+01
5.487132636018068297e+02 4.052265853254735362e+01
5.488132636018068524e+02 4.048629935893371368e+01
5.489132636018068752e+02 4.044249359637981200e+01
5.490132636018068979e+02 4.039138434465071725e+01
5.491132636018069206e+02 4.033312682364775270e+01
5.492132636018068297e+02 4.026788877966868085e+01
5.493132636018068524e+02 4.019585066823956510e+01
5.494132636018068752e+02 4.011720557449100255e+01
5.495132636018068979e+02 4.003215883638232242e+01
5.496132636018069206e+02 3.994092734196695460e+01
5.497132636018068297e+02 3.984373847925706968e+01
5.498132636018068524e+02 3.974082872595583638e+01

5.499132636018068752e+02 3.963244187621322823e+01
5.500132636018068979e+02 3.951882691241141998e+01
5.501132636018069206e+02 3.940023554154645069e+01
5.502132636018068297e+02 3.927691942775085465e+01
5.503132636018068524e+02 3.914912716457520503e+01
5.504132636018068752e+02 3.901710104245981370e+01
5.505132636018068979e+02 3.888107367800862590e+01
5.506132636018069206e+02 3.874126458183997102e+01
5.507132636018068297e+02 3.859787675054641198e+01
5.508132636018068524e+02 3.845109337527213711e+01
5.509132636018068752e+02 3.830107476426027802e+01
5.510132636018068979e+02 3.814795557911698154e+01
5.511132636018069206e+02 3.799184248422541543e+01
5.512132636018068297e+02 3.783281230551881436e+01
5.513132636018068524e+02 3.767091078857033892e+01
5.514132636018068752e+02 3.750615203664227693e+01
5.515132636018068979e+02 3.733851869702252202e+01
5.516132636018069206e+02 3.716796294882464480e+01
5.517132636018068297e+02 3.699440832769863619e+01
5.518132636018068524e+02 3.681775240296106233e+01
5.519132636018068752e+02 3.663787030095643615e+01
5.520132636018068979e+02 3.645461904554477428e+01
5.521132636018069206e+02 3.626784266308182225e+01
5.522132636018068297e+02 3.607737797577178185e+01
5.523132636018068524e+02 3.588306098452572712e+01
5.524132636018068752e+02 3.568473372114343789e+01
5.525132636018068979e+02 3.548225143045119978e+01
5.526132636018069206e+02 3.527548992662181604e+01
5.527132636018068297e+02 3.506435295487558079e+01
5.528132636018068524e+02 3.484877938063097247e+01
5.529132636018068752e+02 3.462875002336400598e+01
5.530132636018068979e+02 3.440429395225394416e+01
5.531132636018069206e+02 3.417549406532288003e+01
5.532132636018068297e+02 3.394249178326652583e+01
5.533132636018068524e+02 3.370549070343196973e+01
5.534132636018068752e+02 3.346475907819254303e+01
5.535132636018068979e+02 3.322063100493540588e+01
5.536132636018069206e+02 3.297350624151875564e+01
5.537132636018068297e+02 3.272384859076171892e+01
5.538132636018068524e+02 3.247218282959448743e+01
5.539132636018068752e+02 3.221909019212488090e+01
5.540132636018068979e+02 3.196520245022640694e+01
5.541132636018069206e+02 3.171119466942946019e+01
5.542132636018068297e+02 3.145777675101202675e+01
5.543132636018068524e+02 3.120568390234932821e+01
5.544132636018068752e+02 3.095566620595375795e+01

5.545132636018068979e+02 3.070847748243068054e+01
5.546132636018069206e+02 3.046486366309967053e+01
5.547132636018068297e+02 3.022555090369038666e+01
5.548132636018068524e+02 2.999123368085219710e+01
5.549132636018068752e+02 2.976256311788679199e+01
5.550132636018068979e+02 2.954013578494084413e+01
5.551132636018069206e+02 2.932448321185871976e+01
5.552132636018068297e+02 2.911606233911935249e+01
5.553132636018068524e+02 2.891524711405858739e+01
5.554132636018068752e+02 2.872232141633821811e+01
5.555132636018068979e+02 2.853747346893923975e+01
5.556132636018069206e+02 2.836079185952213777e+01
5.557132636018068297e+02 2.819226326260787019e+01
5.558132636018068524e+02 2.803177191656364187e+01
5.559132636018068752e+02 2.787910087176297935e+01
5.560132636018068979e+02 2.773393498848755812e+01
5.561132636018069206e+02 2.759586562611399785e+01
5.562132636018068297e+02 2.746439692981528324e+01
5.563132636018068524e+02 2.733895358828749522e+01
5.564132636018068752e+02 2.721888990668947628e+01
5.565132636018068979e+02 2.710350001375570983e+01
5.566132636018069206e+02 2.699202900148894102e+01
5.567132636018068297e+02 2.688368478039721055e+01
5.568132636018068524e+02 2.677765042319998656e+01
5.569132636018068752e+02 2.667309676542139840e+01
5.570132636018068979e+02 2.656919503228953516e+01
5.571132636018069206e+02 2.646512926768909679e+01
5.572132636018068297e+02 2.636010835224238491e+01
5.573132636018068524e+02 2.625337741346093878e+01
5.574132636018068752e+02 2.614422845073995205e+01
5.575132636018068979e+02 2.603201002108661299e+01
5.576132636018069206e+02 2.591613585713973222e+01
5.577132636018068297e+02 2.579609231645691381e+01
5.578132636018068524e+02 2.567144458940643403e+01
5.579132636018068752e+02 2.554184162149756787e+01
5.580132636018068979e+02 2.540701973383602308e+01
5.581132636018069206e+02 2.526680495188277931e+01
5.582132636018068297e+02 2.512111407717225831e+01
5.583132636018068524e+02 2.496995455855974910e+01
5.584132636018068752e+02 2.481342323846760678e+01
5.585132636018068979e+02 2.465170406515283474e+01
5.586132636018069206e+02 2.448506487401950693e+01
5.587132636018068297e+02 2.431385334935669107e+01
5.588132636018068524e+02 2.413849228263297420e+01
5.589132636018068752e+02 2.395947424476825560e+01
5.590132636018068979e+02 2.377735578787813608e+01

5.591132636018069206e+02 2.359275128718662984e+01
5.592132636018068297e+02 2.340632652653658141e+01
5.593132636018068524e+02 2.321879212165680428e+01
5.594132636018068752e+02 2.303089686457479957e+01
5.595132636018068979e+02 2.284342106080709556e+01
5.596132636018069206e+02 2.265716991873059527e+01
5.597132636018068297e+02 2.247296703833756482e+01
5.598132636018068524e+02 2.229164803485753410e+01
5.599132636018068752e+02 2.211405432190593601e+01
5.600132636018068979e+02 2.194102706923875701e+01
5.601132636018069206e+02 2.177340134213336853e+01
5.602132636018068297e+02 2.161200042308254865e+01
5.603132636018068524e+02 2.145763031200420201e+01
5.604132636018068752e+02 2.131107439857942865e+01
5.605132636018068979e+02 2.117308829960639827e+01
5.606132636018069206e+02 2.104439485529434961e+01
5.607132636018068297e+02 2.092567928105478359e+01
5.608132636018068524e+02 2.081758447535670342e+01
5.609132636018068752e+02 2.072070648933288339e+01
5.610132636018068979e+02 2.063559016975625227e+01
5.611132636018069206e+02 2.056272499343126725e+01
5.612132636018068297e+02 2.050254111763209153e+01
5.613132636018068524e+02 2.045540567764131268e+01
5.614132636018068752e+02 2.042161936838271430e+01
5.615132636018068979e+02 2.040141335230573461e+01
5.616132636018069206e+02 2.039494653980416672e+01
5.617132636018068297e+02 2.040230329131215825e+01
5.618132636018068524e+02 2.042349159163575223e+01
5.619132636018068752e+02 2.045844174691139727e+01
5.620132636018068979e+02 2.050700565275371900e+01
5.621132636018069206e+02 2.056895667862907828e+01
5.622132636018068297e+02 2.064399020828781772e+01
5.623132636018068524e+02 2.073172486927859381e+01
5.624132636018068752e+02 2.083170447626426380e+01
5.625132636018068979e+02 2.094340070322528646e+01
5.626132636018069206e+02 2.106621648886871512e+01
5.627132636018068297e+02 2.119949016789306739e+01
5.628132636018068524e+02 2.134250030845347013e+01
5.629132636018068752e+02 2.149447122350975192e+01
5.630132636018068979e+02 2.165457911102212663e+01
5.631132636018069206e+02 2.182195876549353386e+01
5.632132636018068297e+02 2.199571079145242081e+01
5.633132636018068524e+02 2.217490923843102024e+01
5.634132636018068752e+02 2.235860956711213987e+01
5.635132636018068979e+02 2.254585684786525945e+01
5.636132636018069206e+02 2.273569408611547260e+01

5.637132636018068297e+02 2.292717056409731669e+01
5.638132636018068524e+02 2.311935008571395755e+01
5.639132636018068752e+02 2.331131901057498368e+01
5.640132636018068979e+02 2.350219396490061285e+01
5.641132636018069206e+02 2.369112912087887679e+01
5.642132636018068297e+02 2.387732294220766249e+01
5.643132636018068524e+02 2.406002430185532859e+01
5.644132636018068752e+02 2.423853788837773848e+01
5.645132636018068979e+02 2.441222882922950532e+01
5.646132636018069206e+02 2.458052647314404382e+01
5.647132636018068297e+02 2.474292728852360312e+01
5.648132636018068524e+02 2.489899685053370604e+01
5.649132636018068752e+02 2.504837090585987625e+01
5.650132636018068979e+02 2.519075552046751199e+01
5.651132636018069206e+02 2.532592633180576769e+01
5.652132636018068297e+02 2.545372694231964061e+01
5.653132636018068524e+02 2.557406650550207061e+01
5.654132636018068752e+02 2.568691656868702111e+01
5.655132636018068979e+02 2.579230724804665442e+01
5.656132636018069206e+02 2.589032282056480483e+01
5.657132636018068297e+02 2.598109682492266614e+01
5.658132636018068524e+02 2.606480676813343322e+01
5.659132636018068752e+02 2.614166853734954543e+01
5.660132636018068979e+02 2.621193061657120893e+01
5.661132636018069206e+02 2.627586820609814566e+01
5.662132636018068297e+02 2.633377733866296921e+01
5.663132636018068524e+02 2.638596908048124234e+01
5.664132636018068752e+02 2.643276389823337524e+01
5.665132636018068979e+02 2.647448626456507270e+01
5.666132636018069206e+02 2.651145956539756554e+01
5.667132636018068297e+02 2.654400136252278131e+01
5.668132636018068524e+02 2.657241905496368162e+01
5.669132636018068752e+02 2.659700597273154798e+01
5.670132636018068979e+02 2.661803792719790707e+01
5.671132636018069206e+02 2.663577023356674189e+01
5.672132636018068297e+02 2.665043521307486074e+01
5.673132636018068524e+02 2.666224017569775739e+01
5.674132636018068752e+02 2.667136587836601791e+01
5.675132636018068979e+02 2.667796544900923905e+01
5.676132636018069206e+02 2.668216376309128179e+01
5.677132636018068297e+02 2.668405725657364513e+01
5.678132636018068524e+02 2.668371415729849616e+01
5.679132636018068752e+02 2.668117511543216835e+01
5.680132636018068979e+02 2.667645421265734029e+01
5.681132636018069206e+02 2.666954032903524308e+01
5.682132636018068297e+02 2.666039884568075991e+01

5.683132636018068524e+02 2.664897366042153948e+01
5.684132636018068752e+02 2.663518949230286381e+01
5.685132636018068979e+02 2.661895444904557451e+01
5.686132636018069206e+02 2.660016282931317733e+01
5.687132636018068297e+02 2.657869812889394012e+01
5.688132636018068524e+02 2.655443621670865184e+01
5.689132636018068752e+02 2.652724864302264507e+01
5.690132636018068979e+02 2.649700603852476277e+01
5.691132636018069206e+02 2.646358155922922251e+01
5.692132636018068297e+02 2.642685432868078976e+01
5.693132636018068524e+02 2.638671282593398004e+01
5.694132636018068752e+02 2.634305816547366064e+01
5.695132636018068979e+02 2.629580721387043951e+01
5.696132636018069206e+02 2.624489548772258729e+01
5.697132636018068297e+02 2.619027977848472233e+01
5.698132636018068524e+02 2.613194045223696804e+01
5.699132636018068752e+02 2.606988337635874231e+01
5.700132636018068979e+02 2.600414143043215631e+01
5.701132636018069206e+02 2.593477556543700757e+01
5.702132636018068297e+02 2.586187538327780544e+01
5.703132636018068524e+02 2.578555921770605863e+01
5.704132636018068752e+02 2.570597370752475186e+01
5.705132636018068979e+02 2.562329286329848088e+01
5.706132636018069206e+02 2.553771663932917946e+01
5.707132636018068297e+02 2.544946903306549402e+01
5.708132636018068524e+02 2.535879574406515147e+01
5.709132636018068752e+02 2.526596143381561532e+01
5.710132636018068979e+02 2.517124663585257593e+01
5.711132636018069206e+02 2.507494437246221963e+01
5.712132636018068297e+02 2.497735653961932911e+01
5.713132636018068524e+02 2.487879012557303327e+01
5.714132636018068752e+02 2.477955333057909826e+01
5.715132636018068979e+02 2.467995165569223914e+01
5.716132636018069206e+02 2.458028402733846818e+01
5.717132636018068297e+02 2.448083902170704107e+01
5.718132636018068524e+02 2.438189124900848626e+01
5.719132636018068752e+02 2.428369795255040486e+01
5.720132636018068979e+02 2.418649587163037751e+01
5.721132636018069206e+02 2.409049841069268538e+01
5.722132636018068297e+02 2.399589315030102910e+01
5.723132636018068524e+02 2.390283972849807981e+01
5.724132636018068752e+02 2.381146811427628052e+01
5.725132636018068979e+02 2.372187728837444709e+01
5.726132636018069206e+02 2.363413434059158647e+01
5.727132636018068297e+02 2.354827398738579802e+01
5.728132636018068524e+02 2.346429850875917111e+01

5.729132636018068752e+02 2.338217809933216529e+01
5.730132636018068979e+02 2.330185162504747609e+01
5.731132636018069206e+02 2.322322777403829264e+01
5.732132636018068297e+02 2.314618658773966331e+01
5.733132636018068524e+02 2.307058135618451189e+01
5.734132636018068752e+02 2.299624085945761109e+01
5.735132636018068979e+02 2.292297193533903155e+01
5.736132636018069206e+02 2.285056235111058598e+01
5.737132636018068297e+02 2.277878395520612997e+01
5.738132636018068524e+02 2.270739608177052560e+01
5.739132636018068752e+02 2.263614917819313277e+01
5.740132636018068979e+02 2.256478862229013416e+01
5.741132636018069206e+02 2.249305869205170438e+01
5.742132636018068297e+02 2.242070664682125170e+01
5.743132636018068524e+02 2.234748687454752414e+01
5.744132636018068752e+02 2.227316505549981684e+01
5.745132636018068979e+02 2.219752228874346400e+01
5.746132636018069206e+02 2.212035912393928072e+01
5.747132636018068297e+02 2.204149943787186317e+01
5.748132636018068524e+02 2.196079409274251404e+01
5.749132636018068752e+02 2.187812431188427809e+01
5.750132636018068979e+02 2.179340470835490251e+01
5.751132636018069206e+02 2.170658590298520707e+01
5.752132636018068297e+02 2.161765667101921906e+01
5.753132636018068524e+02 2.152664556053994716e+01
5.754132636018068752e+02 2.143362193144514904e+01
5.755132636018068979e+02 2.133869637077853199e+01
5.756132636018069206e+02 2.124202044863922012e+01
5.757132636018068297e+02 2.114378578853996515e+01
5.758132636018068524e+02 2.104422243676951609e+01
5.759132636018068752e+02 2.094359652680569894e+01
5.760132636018068979e+02 2.084220724685666681e+01
5.761132636018069206e+02 2.074038313089630492e+01
5.762132636018068297e+02 2.063847770580448326e+01
5.763132636018068524e+02 2.053686453913055843e+01
5.764132636018068752e+02 2.043593174327657280e+01
5.765132636018068979e+02 2.033607600228147305e+01
5.766132636018069206e+02 2.023769619663779906e+01
5.767132636018068297e+02 2.014118670948781187e+01
5.768132636018068524e+02 2.004693050396720722e+01
5.769132636018068752e+02 1.995529206628144792e+01
5.770132636018068979e+02 1.986661031224863194e+01
5.771132636018069206e+02 1.978119155651426553e+01
5.772132636018068297e+02 1.969930264347071258e+01
5.773132636018068524e+02 1.962116433718103536e+01
5.774132636018068752e+02 1.954694506443007995e+01

5.775132636018068979e+02 1.947675510056033588e+01
5.776132636018069206e+02 1.941064128217036000e+01
5.777132636018068297e+02 1.934858232425446545e+01
5.778132636018068524e+02 1.929048481214184108e+01
5.779132636018068752e+02 1.923617993084939215e+01
5.780132636018068979e+02 1.918542098638118176e+01
5.781132636018069206e+02 1.913788176525463314e+01
5.782132636018068297e+02 1.909315577025019905e+01
5.783132636018068524e+02 1.905075636217422286e+01
5.784132636018068752e+02 1.901011782936646100e+01
5.785132636018068979e+02 1.897059739880566909e+01
5.786132636018069206e+02 1.893147819496500617e+01
5.787132636018068297e+02 1.889197314499900671e+01
5.788132636018068524e+02 1.885122982133292524e+01
5.789132636018068752e+02 1.880833620517052651e+01
5.790132636018068979e+02 1.876232734672066726e+01
5.791132636018069206e+02 1.871219288993815155e+01
5.792132636018068297e+02 1.865688542115807280e+01
5.793132636018068524e+02 1.859532959206615033e+01
5.794132636018068752e+02 1.852643195790924580e+01
5.795132636018068979e+02 1.844909146166990865e+01
5.796132636018069206e+02 1.836221048411351475e+01
5.797132636018068297e+02 1.826470636823486871e+01
5.798132636018068524e+02 1.815552331481752191e+01
5.799132636018068752e+02 1.803364453377610488e+01
5.800132636018068979e+02 1.789810452395550655e+01
5.801132636018069206e+02 1.774800134245220562e+01
5.802132636018068297e+02 1.758250871370322344e+01
5.803132636018068524e+02 1.740088781900874793e+01
5.804132636018068752e+02 1.720249859929781877e+01
5.805132636018068979e+02 1.698681039831183170e+01
5.806132636018069206e+02 1.675341177046023233e+01
5.807132636018068297e+02 1.650201927785790090e+01
5.808132636018068524e+02 1.623248510489483110e+01
5.809132636018068752e+02 1.594480332644348763e+01
5.810132636018068979e+02 1.563911467770966013e+01
5.811132636018069206e+02 1.531570968988595638e+01
5.812132636018068297e+02 1.497503007614479920e+01
5.813132636018068524e+02 1.461766827693432624e+01
5.814132636018068752e+02 1.424436510168262160e+01
5.815132636018068979e+02 1.385600543538956941e+01
5.816132636018069206e+02 1.345361201256048922e+01
5.817132636018068297e+02 1.303833729674626341e+01
5.818132636018068524e+02 1.261145354073061853e+01
5.819132636018068752e+02 1.217434113918391070e+01
5.820132636018068979e+02 1.172847542137506593e+01

5.821132636018069206e+02 1.127541206526979600e+01
5.822132636018068297e+02 1.081677134503214788e+01
5.823132636018068524e+02 1.035422145063972010e+01

FS CO

5.264718648244726182e+02 2.506674208605288212e-12
5.265718648244726410e+02 9.019125300521040456e-12
5.266718648244726637e+02 2.818648268374626650e-11
5.267718648244725728e+02 8.087438731930824084e-11
5.268718648244725955e+02 2.227620660864287469e-10
5.269718648244726182e+02 6.039769445069381664e-10
5.270718648244726410e+02 1.631409140321868952e-09
5.271718648244726637e+02 4.414520584084596225e-09
5.272718648244725728e+02 1.198388847876420986e-08
5.273718648244725955e+02 3.254688690901413676e-08
5.274718648244726182e+02 8.791666123592543031e-08
5.275718648244726410e+02 2.346924519504758827e-07
5.276718648244726637e+02 6.167461289961130723e-07
5.277718648244725728e+02 1.597483827283450094e-06
5.278718648244725955e+02 4.107958822749349099e-06
5.279718648244726182e+02 1.059733321232180300e-05
5.280718648244726410e+02 2.762076887182582255e-05
5.281718648244726637e+02 7.259421162402832236e-05
5.282718648244725728e+02 1.904636676418487978e-04
5.283718648244725955e+02 4.934145020064135056e-04
5.284718648244726182e+02 1.256424236392689620e-03
5.285718648244726410e+02 3.157134231959879932e-03
5.286718648244726637e+02 7.899888315741371292e-03
5.287718648244725728e+02 1.986595393899262540e-02
5.288718648244725955e+02 5.051502604633563431e-02
5.289718648244726182e+02 1.301196652933587217e-01
5.290718648244726410e+02 3.383213512376800347e-01
5.291718648244726637e+02 8.788398458213830811e-01
5.292718648244725728e+02 2.234770056642879421e+00
5.293718648244725955e+02 5.342969666075026325e+00
5.294718648244726182e+02 1.116812200861626714e+01
5.295718648244726410e+02 1.874724553227317259e+01
5.296718648244726637e+02 2.475881137432819301e+01
5.297718648244725728e+02 2.759761008738723831e+01
5.298718648244725955e+02 2.832400910035600816e+01
5.299718648244726182e+02 2.823689020262930427e+01
5.300718648244726410e+02 2.797386245880484523e+01
5.301718648244726637e+02 2.771746585714540956e+01
5.302718648244725728e+02 2.747067328073818260e+01
5.303718648244725955e+02 2.721413168095945423e+01
5.304718648244726182e+02 2.696774725386503135e+01

5.305718648244726410e+02 2.678224454642727537e+01
5.306718648244726637e+02 2.670000245037240205e+01
5.307718648244725728e+02 2.673230555058296432e+01
5.308718648244725955e+02 2.686980755482469263e+01
5.309718648244726182e+02 2.711911187391035938e+01
5.310718648244726410e+02 2.756320331130394763e+01
5.311718648244726637e+02 2.839643374526476549e+01
5.312718648244725728e+02 2.978771116649948425e+01
5.313718648244725955e+02 3.158144566609517767e+01
5.314718648244726182e+02 3.329162652297104330e+01
5.315718648244726410e+02 3.461658990323464025e+01
5.316718648244726637e+02 3.573382445847778399e+01
5.317718648244725728e+02 3.691040595553017312e+01
5.318718648244725955e+02 3.817166523407489365e+01
5.319718648244726182e+02 3.948112891405769176e+01
5.320718648244726410e+02 4.096965615075629330e+01
5.321718648244726637e+02 4.290209924603139768e+01
5.322718648244725728e+02 4.551142240261570038e+01
5.323718648244725955e+02 4.886076435834817744e+01
5.324718648244726182e+02 5.278814503754056631e+01
5.325718648244726410e+02 5.693270481915284620e+01
5.326718648244726637e+02 6.081737149480573379e+01
5.327718648244725728e+02 6.395431491928481194e+01
5.328718648244725955e+02 6.594260694656571786e+01
5.329718648244726182e+02 6.653654800159895899e+01
5.330718648244726410e+02 6.567408786663214926e+01
5.331718648244726637e+02 6.346568034238877942e+01
5.332718648244725728e+02 6.015299063121242540e+01
5.333718648244725955e+02 5.605217236908539036e+01
5.334718648244726182e+02 5.149690053856902239e+01
5.335718648244726410e+02 4.679265247948423934e+01
5.336718648244726637e+02 4.218792603688505238e+01
5.337718648244725728e+02 3.786251181398767329e+01
5.338718648244725955e+02 3.392919037104547897e+01
5.339718648244726182e+02 3.044375228664053523e+01
5.340718648244726410e+02 2.741857365516958822e+01
5.341718648244726637e+02 2.483627263332818202e+01
5.342718648244725728e+02 2.266145583771795202e+01
5.343718648244725955e+02 2.084977410551977783e+01
5.344718648244726182e+02 1.935429038184157946e+01
5.345718648244726410e+02 1.812956034982736497e+01
5.346718648244726637e+02 1.713395771707126869e+01
5.347718648244725728e+02 1.633075798943248813e+01
5.348718648244725955e+02 1.568841088266593609e+01
5.349718648244726182e+02 1.518033081491908831e+01
5.350718648244726410e+02 1.478444050934618481e+01

5.351718648244726637e+02 1.448262344574760085e+01
5.352718648244725728e+02 1.426017862692698657e+01
5.353718648244725955e+02 1.410532499902229375e+01
5.354718648244726182e+02 1.400877110568782236e+01
5.355718648244726410e+02 1.396334607900966418e+01
5.356718648244726637e+02 1.396367858005627482e+01
5.357718648244725728e+02 1.400590830160253120e+01
5.358718648244725955e+02 1.408741754197362894e+01
5.359718648244726182e+02 1.420657568511008151e+01
5.360718648244726410e+02 1.436249509852233075e+01
5.361718648244726637e+02 1.455480150441166387e+01
5.362718648244725728e+02 1.478342449247930190e+01
5.363718648244725955e+02 1.504841437056248132e+01
5.364718648244726182e+02 1.534979032807644828e+01
5.365718648244726410e+02 1.568742254137579906e+01
5.366718648244726637e+02 1.606094808512677474e+01
5.367718648244725728e+02 1.646971795158645335e+01
5.368718648244725955e+02 1.691277055650014205e+01
5.369718648244726182e+02 1.738882603995681464e+01
5.370718648244726410e+02 1.789629546194338516e+01
5.371718648244726637e+02 1.843329950196911327e+01
5.372718648244725728e+02 1.899769227050759213e+01
5.373718648244725955e+02 1.958708707522186998e+01
5.374718648244726182e+02 2.019888223188280563e+01
5.375718648244726410e+02 2.083028610013802506e+01
5.376718648244726637e+02 2.147834135716049531e+01
5.377718648244725728e+02 2.213994906085844860e+01
5.378718648244725955e+02 2.281189331238666540e+01
5.379718648244726182e+02 2.349086735189958830e+01
5.380718648244726410e+02 2.417350177465193184e+01
5.381718648244726637e+02 2.485639530173666856e+01
5.382718648244725728e+02 2.553614823875341955e+01
5.383718648244725955e+02 2.620939845200786067e+01
5.384718648244726182e+02 2.687285941720583793e+01
5.385718648244726410e+02 2.752335966911809351e+01
5.386718648244726637e+02 2.815788281127476012e+01
5.387718648244725728e+02 2.877360713404039672e+01
5.388718648244725955e+02 2.936794383447690393e+01
5.389718648244726182e+02 2.993857282682562371e+01
5.390718648244726410e+02 3.048347517183013267e+01
5.391718648244726637e+02 3.100096122992010450e+01
5.392718648244725728e+02 3.148969375112186242e+01
5.393718648244725955e+02 3.194870524736334261e+01
5.394718648244726182e+02 3.237740914469032560e+01
5.395718648244726410e+02 3.277560437798504012e+01
5.396718648244726637e+02 3.314347326328052645e+01

5.397718648244725728e+02 3.348157265695604679e+01
5.398718648244725955e+02 3.379081858141169192e+01
5.399718648244726182e+02 3.407246465800881197e+01
5.400718648244726410e+02 3.432807483542032401e+01
5.401718648244726637e+02 3.455949103105021436e+01
5.402718648244725728e+02 3.476879641170472013e+01
5.403718648244725955e+02 3.495827512502107481e+01
5.404718648244726182e+02 3.513036935404465311e+01
5.405718648244726410e+02 3.528763460348491776e+01
5.406718648244726637e+02 3.543269413811280799e+01
5.407718648244725728e+02 3.556819348273855041e+01
5.408718648244725955e+02 3.569675586105088883e+01
5.409718648244726182e+02 3.582093939954562245e+01
5.410718648244726410e+02 3.594319685533713482e+01
5.411718648244726637e+02 3.606583854550086699e+01
5.412718648244725728e+02 3.619099906346647799e+01
5.413718648244725955e+02 3.632060826758559813e+01
5.414718648244726182e+02 3.645636692098782561e+01
5.415718648244726410e+02 3.659972725277874162e+01
5.416718648244726637e+02 3.675187860097049253e+01
5.417718648244725728e+02 3.691373818959993258e+01
5.418718648244725955e+02 3.708594698845345050e+01
5.419718648244726182e+02 3.726887050571035331e+01
5.420718648244726410e+02 3.746260427346322786e+01
5.421718648244726637e+02 3.766698370508916582e+01
5.422718648244725728e+02 3.788159793319456980e+01
5.423718648244725955e+02 3.810580717840576881e+01
5.424718648244726182e+02 3.833876315339546181e+01
5.425718648244726410e+02 3.857943197363331933e+01
5.426718648244726637e+02 3.882661902650215779e+01
5.427718648244725728e+02 3.907899524335592645e+01
5.428718648244725955e+02 3.933512422419734378e+01
5.429718648244726182e+02 3.959348968103003585e+01
5.430718648244726410e+02 3.985252269242147349e+01
5.431718648244726637e+02 4.011062829704885502e+01
5.432718648244725728e+02 4.036621099649229905e+01
5.433718648244725955e+02 4.061769878571234926e+01
5.434718648244726182e+02 4.086356538192571008e+01
5.435718648244726410e+02 4.110235037743461106e+01
5.436718648244726637e+02 4.133267709793526024e+01
5.437718648244725728e+02 4.155326800363048534e+01
5.438718648244725955e+02 4.176295752497070168e+01
5.439718648244726182e+02 4.196070227709635247e+01
5.440718648244726410e+02 4.214558864629589863e+01
5.441718648244726637e+02 4.231683778745249924e+01
5.442718648244725728e+02 4.247380811311683146e+01

5.443718648244725955e+02 4.261599539225363031e+01
5.444718648244726182e+02 4.274303060972052037e+01
5.445718648244726410e+02 4.285467576609708829e+01
5.446718648244726637e+02 4.295081782160131922e+01
5.447718648244725728e+02 4.303146100756310233e+01
5.448718648244725955e+02 4.309671774433819280e+01
5.449718648244726182e+02 4.314679841571721397e+01
5.450718648244726410e+02 4.318200025688344112e+01
5.451718648244726637e+02 4.320269561586415819e+01
5.452718648244725728e+02 4.320931984725943664e+01
5.453718648244725955e+02 4.320235909188910739e+01
5.454718648244726182e+02 4.318233818694490367e+01
5.455718648244726410e+02 4.314980893838221476e+01
5.456718648244726637e+02 4.310533897078423848e+01
5.457718648244725728e+02 4.304950134998675537e+01
5.458718648244725955e+02 4.298286515063912816e+01
5.459718648244726182e+02 4.290598711494699558e+01
5.460718648244726410e+02 4.281940452052310775e+01
5.461718648244726637e+02 4.272362934507009413e+01
5.462718648244725728e+02 4.261914378411101012e+01
5.463718648244725955e+02 4.250639714580677975e+01
5.464718648244726182e+02 4.238580411473527931e+01
5.465718648244726410e+02 4.225774434505987642e+01
5.466718648244726637e+02 4.212256331349857419e+01
5.467718648244725728e+02 4.198057433460260768e+01
5.468718648244725955e+02 4.183206161571715143e+01
5.469718648244726182e+02 4.167728420720464300e+01
5.470718648244726410e+02 4.151648068555837057e+01
5.471718648244726637e+02 4.134987439331763426e+01
5.472718648244725728e+02 4.117767905048857813e+01
5.473718648244725955e+02 4.100010454763759071e+01
5.474718648244726182e+02 4.081736273098334777e+01
5.475718648244726410e+02 4.062967299457174875e+01
5.476718648244726637e+02 4.043726750376482926e+01
5.477718648244725728e+02 4.024039588748036067e+01
5.478718648244725955e+02 4.003932925347149308e+01
5.479718648244726182e+02 3.983436340093452799e+01
5.480718648244726410e+02 3.962582112732109607e+01
5.481718648244726637e+02 3.941405355081248274e+01
5.482718648244725728e+02 3.919944039586388840e+01
5.483718648244725955e+02 3.898238921592221828e+01
5.484718648244726182e+02 3.876333355424610261e+01
5.485718648244726410e+02 3.854273007012322694e+01
5.486718648244726637e+02 3.832105468313756802e+01
5.487718648244725728e+02 3.809879781198367255e+01
5.488718648244725955e+02 3.787645880620459593e+01

5.489718648244726182e+02 3.765453968875384305e+01
5.490718648244726410e+02 3.743353834411689718e+01
5.491718648244726637e+02 3.721394130059751859e+01
5.492718648244725728e+02 3.699621626607257241e+01
5.493718648244725955e+02 3.678080458388139107e+01
5.494718648244726182e+02 3.656811377945197705e+01
5.495718648244726410e+02 3.635851036872187336e+01
5.496718648244726637e+02 3.615231309639885637e+01
5.497718648244725728e+02 3.594978676568106124e+01
5.498718648244725955e+02 3.575113681132317822e+01
5.499718648244726182e+02 3.555650475505876784e+01
5.500718648244726410e+02 3.536596466656678217e+01
5.501718648244726637e+02 3.517952073467080254e+01
5.502718648244725728e+02 3.499710603257916830e+01
5.503718648244725955e+02 3.481858253807558867e+01
5.504718648244726182e+02 3.464374244504798384e+01
5.505718648244726410e+02 3.447231077704464042e+01
5.506718648244726637e+02 3.430394928715105607e+01
5.507718648244725728e+02 3.413826160189790926e+01
5.508718648244725955e+02 3.397479954067557628e+01
5.509718648244726182e+02 3.381307051678762576e+01
5.510718648244726410e+02 3.365254590237140064e+01
5.511718648244726637e+02 3.349267021748019602e+01
5.512718648244725728e+02 3.333287098416970906e+01
5.513718648244725955e+02 3.317256906992766829e+01
5.514718648244726182e+02 3.301118933164774916e+01
5.515718648244726410e+02 3.284817136193078824e+01
5.516718648244726637e+02 3.268298013406969460e+01
5.517718648244725728e+02 3.251511634083417590e+01
5.518718648244725955e+02 3.234412622521381309e+01
5.519718648244726182e+02 3.216961070860119776e+01
5.520718648244726410e+02 3.199123363340751780e+01
5.521718648244726637e+02 3.180872895259835786e+01
5.522718648244725728e+02 3.162190671782845186e+01
5.523718648244725955e+02 3.143065774035816418e+01
5.524718648244726182e+02 3.123495682429102871e+01
5.525718648244726410e+02 3.103486449934814217e+01
5.526718648244726637e+02 3.083052720980545658e+01
5.527718648244725728e+02 3.062217594673272458e+01
5.528718648244725955e+02 3.041012334162865471e+01
5.529718648244726182e+02 3.019475927027578877e+01
5.530718648244726410e+02 2.997654504547241316e+01
5.531718648244726637e+02 2.975600630558967552e+01
5.532718648244725728e+02 2.953372473203085491e+01
5.533718648244725955e+02 2.931032875207636579e+01
5.534718648244726182e+02 2.908648340376479169e+01

5.535718648244726410e+02 2.886287955596073118e+01
5.536718648244726637e+02 2.864022268923342551e+01
5.537718648244725728e+02 2.841922145135253430e+01
5.538718648244725955e+02 2.820057620492724482e+01
5.539718648244726182e+02 2.798496778390099493e+01
5.540718648244726410e+02 2.777304667029222429e+01
5.541718648244726637e+02 2.756542279287165087e+01
5.542718648244725728e+02 2.736265613561160137e+01
5.543718648244725955e+02 2.716524832605288253e+01
5.544718648244726182e+02 2.697363535260915413e+01
5.545718648244726410e+02 2.678818153575124228e+01
5.546718648244726637e+02 2.660917485152768336e+01
5.547718648244725728e+02 2.643682367758208329e+01
5.548718648244725955e+02 2.627125500236359557e+01
5.549718648244726182e+02 2.611251410825687458e+01
5.550718648244726410e+02 2.596056570955338572e+01
5.551718648244726637e+02 2.581529649721736774e+01
5.552718648244725728e+02 2.567651901490295074e+01
5.553718648244725955e+02 2.554397676526470917e+01
5.554718648244726182e+02 2.541735042281466761e+01
5.555718648244726410e+02 2.529626500990058702e+01
5.556718648244726637e+02 2.518029787621389914e+01
5.557718648244725728e+02 2.506898730989134094e+01
5.558718648244725955e+02 2.496184159997078922e+01
5.559718648244726182e+02 2.485834836580955098e+01
5.560718648244726410e+02 2.475798396908156462e+01
5.561718648244726637e+02 2.466022282804733834e+01
5.562718648244725728e+02 2.456454646173867218e+01
5.563718648244725955e+02 2.447045210323555864e+01
5.564718648244726182e+02 2.437746073596230190e+01
5.565718648244726410e+02 2.428512442444715447e+01
5.566718648244726637e+02 2.419303283077312017e+01
5.567718648244725728e+02 2.410081882944202647e+01
5.568718648244725955e+02 2.400816315600294004e+01
5.569718648244726182e+02 2.391479804796291120e+01
5.570718648244726410e+02 2.382050985961204148e+01
5.571718648244726637e+02 2.372514065488514490e+01
5.572718648244725728e+02 2.362858880370790615e+01
5.573718648244725955e+02 2.353080862694772790e+01
5.574718648244726182e+02 2.343180915267735998e+01
5.575718648244726410e+02 2.333165206160157368e+01
5.576718648244726637e+02 2.323044891191363348e+01
5.577718648244725728e+02 2.312835774334005734e+01
5.578718648244725955e+02 2.302557916658897597e+01
5.579718648244726182e+02 2.292235204781662006e+01
5.580718648244726410e+02 2.281894889813126071e+01

5.581718648244726637e+02 2.271567107570975708e+01
5.582718648244725728e+02 2.261284390302691349e+01
5.583718648244725955e+02 2.251081179428218348e+01
5.584718648244726182e+02 2.240993347868973373e+01
5.585718648244726410e+02 2.231057739426994146e+01
5.586718648244726637e+02 2.221311731455667626e+01
5.587718648244725728e+02 2.211792825765770232e+01
5.588718648244725955e+02 2.202538271381561685e+01
5.589718648244726182e+02 2.193584721444830521e+01
5.590718648244726410e+02 2.184967925301389258e+01
5.591718648244726637e+02 2.176722455632389597e+01
5.592718648244725728e+02 2.168881469445352650e+01
5.593718648244725955e+02 2.161476500845005333e+01
5.594718648244726182e+02 2.154537282783778096e+01
5.595718648244726410e+02 2.148091594461371301e+01
5.596718648244726637e+02 2.142165130710392162e+01
5.597718648244725728e+02 2.136781389571886081e+01
5.598718648244725955e+02 2.131961574325036324e+01
5.599718648244726182e+02 2.127724506476997135e+01
5.600718648244726410e+02 2.124086546623703242e+01
5.601718648244726637e+02 2.121061520637028863e+01
5.602718648244725728e+02 2.118660649290191245e+01
5.603718648244725955e+02 2.116892480170816526e+01
5.604718648244726182e+02 2.115762821516329950e+01
5.605718648244726410e+02 2.115274678405416964e+01
5.606718648244726637e+02 2.115428192517796191e+01
5.607718648244725728e+02 2.116220587400414388e+01
5.608718648244725955e+02 2.117646121820362737e+01
5.609718648244726182e+02 2.119696054317157774e+01
5.610718648244726410e+02 2.122358622466067146e+01
5.611718648244726637e+02 2.125619040612429700e+01
5.612718648244725728e+02 2.129459519921691069e+01
5.613718648244725955e+02 2.133859314504147875e+01
5.614718648244726182e+02 2.138794797116458568e+01
5.615718648244726410e+02 2.144239567518208389e+01
5.616718648244726637e+02 2.150164595981897975e+01
5.617718648244725728e+02 2.156538403734038667e+01
5.618718648244725955e+02 2.163327281263934765e+01
5.619718648244726182e+02 2.170495544499562612e+01
5.620718648244726410e+02 2.178005827844484088e+01
5.621718648244726637e+02 2.185819412025984221e+01
5.622718648244725728e+02 2.193896583654632337e+01
5.623718648244725955e+02 2.202197022371640145e+01
5.624718648244726182e+02 2.210680210495019082e+01
5.625718648244726410e+02 2.219305859199893050e+01
5.626718648244726637e+02 2.228034344511396370e+01

5.627718648244725728e+02 2.236827145776551262e+01
5.628718648244725955e+02 2.245647278836938199e+01
5.629718648244726182e+02 2.254459715864840419e+01
5.630718648244726410e+02 2.263231783764896221e+01
5.631718648244726637e+02 2.271933533188829557e+01
5.632718648244725728e+02 2.280538070563993358e+01
5.633718648244725955e+02 2.289021846093306678e+01
5.634718648244726182e+02 2.297364891433953815e+01
5.635718648244726410e+02 2.305551001688948531e+01
5.636718648244726637e+02 2.313567857427381114e+01
5.637718648244725728e+02 2.321407083658985471e+01
5.638718648244725955e+02 2.329064243995367178e+01
5.639718648244726182e+02 2.336538769599110665e+01
5.640718648244726410e+02 2.343833823915789338e+01
5.641718648244726637e+02 2.350956105564193166e+01
5.642718648244725728e+02 2.357915593088084449e+01
5.643718648244725955e+02 2.364725236511172213e+01
5.644718648244726182e+02 2.371400601750496406e+01
5.645718648244726410e+02 2.377959474900866610e+01
5.646718648244726637e+02 2.384421434177535915e+01
5.647718648244725728e+02 2.390807397875297369e+01
5.648718648244725955e+02 2.397139157055178060e+01
5.649718648244726182e+02 2.403438901797951388e+01
5.650718648244726410e+02 2.409728749766830447e+01
5.651718648244726637e+02 2.416030285507927289e+01
5.652718648244725728e+02 2.422364118400983912e+01
5.653718648244725955e+02 2.428749466476347862e+01
5.654718648244726182e+02 2.435203772464011251e+01
5.655718648244726410e+02 2.441742357469154001e+01
5.656718648244726637e+02 2.448378116610896882e+01
5.657718648244725728e+02 2.455121259854781002e+01
5.658718648244725955e+02 2.461979100151895139e+01
5.659718648244726182e+02 2.468955889906152379e+01
5.660718648244726410e+02 2.476052705759495964e+01
5.661718648244726637e+02 2.483267380743603070e+01
5.662718648244725728e+02 2.490594482021195688e+01
5.663718648244725955e+02 2.498025331749568778e+01
5.664718648244726182e+02 2.505548068056552324e+01
5.665718648244726410e+02 2.513147742730392409e+01
5.666718648244726637e+02 2.520806451988916663e+01
5.667718648244725728e+02 2.528503496602387202e+01
5.668718648244725955e+02 2.536215567684342886e+01
5.669718648244726182e+02 2.543916954617052539e+01
5.670718648244726410e+02 2.551579771819740117e+01
5.671718648244726637e+02 2.559174201372652746e+01
5.672718648244725728e+02 2.566668748851464699e+01

5.673718648244725955e+02 2.574030510077058764e+01
5.674718648244726182e+02 2.581225446819779989e+01
5.675718648244726410e+02 2.588218669791784521e+01
5.676718648244726637e+02 2.594974727496688160e+01
5.677718648244725728e+02 2.601457899667776630e+01
5.678718648244725955e+02 2.607632494105214960e+01
5.679718648244726182e+02 2.613463145715044078e+01
5.680718648244726410e+02 2.618915116460449255e+01
5.681718648244726637e+02 2.623954594765914194e+01
5.682718648244725728e+02 2.628548992679787943e+01
5.683718648244725955e+02 2.632667238816915045e+01
5.684718648244726182e+02 2.636280064789904998e+01
5.685718648244726410e+02 2.639360282517081657e+01
5.686718648244726637e+02 2.641883049490041202e+01
5.687718648244725728e+02 2.643826118816389936e+01
5.688718648244725955e+02 2.645170070645047744e+01
5.689718648244726182e+02 2.645898521450959606e+01
5.690718648244726410e+02 2.645998307618868495e+01
5.691718648244726637e+02 2.645459639833198295e+01
5.692718648244725728e+02 2.644276224959849486e+01
5.693718648244725955e+02 2.642445352398009817e+01
5.694718648244726182e+02 2.639967942282885360e+01
5.695718648244726410e+02 2.636848553425977215e+01
5.696718648244726637e+02 2.633095349476515423e+01
5.697718648244725728e+02 2.628720022460017702e+01
5.698718648244725955e+02 2.623737673579452334e+01
5.699718648244726182e+02 2.618166651930304312e+01
5.700718648244726410e+02 2.612028352560931310e+01
5.701718648244726637e+02 2.605346976082013555e+01
5.702718648244725728e+02 2.598149252771553108e+01
5.703718648244725955e+02 2.590464134814675390e+01
5.704718648244726182e+02 2.582322460941981390e+01
5.705718648244726410e+02 2.573756598270811580e+01
5.706718648244726637e+02 2.564800066597966932e+01
5.707718648244725728e+02 2.555487150731003254e+01
5.708718648244725955e+02 2.545852506672387960e+01
5.709718648244726182e+02 2.535930767584477152e+01
5.710718648244726410e+02 2.525756155464333474e+01
5.711718648244726637e+02 2.515362104349761907e+01
5.712718648244725728e+02 2.504780900668403021e+01
5.713718648244725955e+02 2.494043346038544584e+01
5.714718648244726182e+02 2.483178447444051429e+01
5.715718648244726410e+02 2.472213139247564939e+01
5.716718648244726637e+02 2.461172040987723619e+01
5.717718648244725728e+02 2.450077254339693056e+01
5.718718648244725955e+02 2.438948202015073718e+01

5.719718648244726182e+02 2.427801510748541247e+01
5.720718648244726410e+02 2.416650939874006099e+01
5.721718648244726637e+02 2.405507356341982472e+01
5.722718648244725728e+02 2.394378756379639128e+01
5.723718648244725955e+02 2.383270333352711390e+01
5.724718648244726182e+02 2.372184590759411194e+01
5.725718648244726410e+02 2.361121498675799657e+01
5.726718648244726637e+02 2.350078691383711060e+01
5.727718648244725728e+02 2.339051703349924338e+01
5.728718648244725955e+02 2.328034240192798521e+01
5.729718648244726182e+02 2.317018480773057476e+01
5.730718648244726410e+02 2.305995406083092192e+01
5.731718648244726637e+02 2.294955150188075876e+01
5.732718648244725728e+02 2.283887368096996440e+01
5.733718648244725955e+02 2.272781615117656173e+01
5.734718648244726182e+02 2.261627731982295231e+01
5.735718648244726410e+02 2.250416229825572145e+01
5.736718648244726637e+02 2.239138668960291767e+01
5.737718648244725728e+02 2.227788025334048072e+01
5.738718648244725955e+02 2.216359038567440720e+01
5.739718648244726182e+02 2.204848535575987967e+01
5.740718648244726410e+02 2.193255723966880666e+01
5.741718648244726637e+02 2.181582449680148272e+01
5.742718648244725728e+02 2.169833413711861425e+01
5.743718648244725955e+02 2.158016343213041921e+01
5.744718648244726182e+02 2.146142112798032286e+01
5.745718648244726410e+02 2.134224812514340286e+01
5.746718648244726637e+02 2.122281759614203622e+01
5.747718648244725728e+02 2.110333452016198308e+01
5.748718648244725955e+02 2.098403462141347831e+01
5.749718648244726182e+02 2.086518270638803330e+01
5.750718648244726410e+02 2.074707040367044186e+01
5.751718648244726637e+02 2.063001331852542819e+01
5.752718648244725728e+02 2.051434762293756009e+01
5.753718648244725955e+02 2.040042610999508810e+01
5.754718648244726182e+02 2.028861374933391204e+01
5.755718648244726410e+02 2.017928278767200467e+01
5.756718648244726637e+02 2.007280744516111781e+01
5.757718648244725728e+02 1.996955826427485547e+01
5.758718648244725955e+02 1.986989617317809120e+01
5.759718648244726182e+02 1.977416632994529877e+01
5.760718648244726410e+02 1.968269181760047815e+01
5.761718648244726637e+02 1.959576726275099290e+01
5.762718648244725728e+02 1.951365245261295911e+01
5.763718648244725955e+02 1.943656602652598409e+01
5.764718648244726182e+02 1.936467931869404424e+01

5.765718648244726410e+02 1.929811042893567219e+01
5.766718648244726637e+02 1.923691859775567536e+01
5.767718648244725728e+02 1.918109896112807888e+01
5.768718648244725955e+02 1.913057775906877112e+01
5.769718648244726182e+02 1.908520807041625744e+01
5.770718648244726410e+02 1.904476614425542635e+01
5.771718648244726637e+02 1.900894839611046905e+01
5.772718648244725728e+02 1.897736913436927253e+01
5.773718648244725955e+02 1.894955907932664374e+01
5.774718648244726182e+02 1.892496473366150767e+01
5.775718648244726410e+02 1.890294865898175658e+01
5.776718648244726637e+02 1.888279070814700944e+01
5.777718648244725728e+02 1.886369025726369841e+01
5.778718648244725955e+02 1.884476947438234617e+01
5.779718648244726182e+02 1.882507765385525644e+01
5.780718648244726410e+02 1.880359663589183583e+01
5.781718648244726637e+02 1.877924731995540242e+01
5.782718648244725728e+02 1.875089726819553704e+01
5.783718648244725955e+02 1.871736938106560544e+01
5.784718648244726182e+02 1.867745161165743895e+01
5.785718648244726410e+02 1.862990766818496979e+01
5.786718648244726637e+02 1.857348863563318631e+01
5.787718648244725728e+02 1.850694542810927246e+01
5.788718648244725955e+02 1.842904196322339061e+01
5.789718648244726182e+02 1.833856892930763749e+01
5.790718648244726410e+02 1.823435799594970064e+01
5.791718648244726637e+02 1.811529629873881220e+01
5.792718648244725728e+02 1.798034101091676362e+01
5.793718648244725955e+02 1.782853379845305852e+01
5.794718648244726182e+02 1.765901494159425056e+01
5.795718648244726410e+02 1.747103689583543940e+01
5.796718648244726637e+02 1.726397705915551484e+01
5.797718648244725728e+02 1.703734951080838300e+01
5.798718648244725955e+02 1.679081549044316191e+01
5.799718648244726182e+02 1.652419239518837202e+01
5.800718648244726410e+02 1.623746108678968625e+01
5.801718648244726637e+02 1.593077132098550663e+01
5.802718648244725728e+02 1.560444513690965707e+01
5.803718648244725955e+02 1.525897807511234028e+01
5.804718648244726182e+02 1.489503812828457185e+01
5.805718648244726410e+02 1.451346236827520109e+01
5.806718648244726637e+02 1.411525123565101580e+01
5.807718648244725728e+02 1.370156052286888126e+01
5.808718648244725955e+02 1.327369112799000206e+01
5.809718648244726182e+02 1.283307670156496449e+01
5.810718648244726410e+02 1.238126935360905279e+01

5.811718648244726637e+02 1.191992362922073667e+01
5.812718648244725728e+02 1.145077899916126540e+01
5.813718648244725955e+02 1.097564114449103201e+01