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## Correspondence: Income Tax and Algebra

F. W. Thornton

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# Correspondence

## INCOME TAX AND ALGEBRA

*Editor, THE JOURNAL OF ACCOUNTANCY:*

SIR: In the June issue of THE JOURNAL Harry S. Wade, in an article on "Income-tax algebra," says of a case where state tax is computed after deducting federal tax and federal tax after state tax that "algebra is necessary." Later in the same article he says of algebra that many men, otherwise strong, tremble when they read "let  $x$  equal so and so." Yes, they do, especially clients.

He even suggests that laws be changed to avoid the need for the use of algebra. Others, too, have prescribed algebraic methods for problems of this sort, and all earn our thanks for trying to help.

For the purpose of computing tax in the circumstances cited on page 446 (1) algebra is not necessary; (2) it is not desirable; (3) it is slow. It is not desirable because our work should be understood by clients.

In any case algebra is but a prop to the weakness of the reasoning faculty; it leads only to a method of using arithmetic. None of us is able to make really involved calculations without its help, but for such questions as these it is not a help.

Here is the arithmetical solution to the question on page 446 of THE JOURNAL:

Taxable, federal . . . . .	\$300,000		
Less 2% of \$200,000 . . . . .	4,000		
	\$296,000	13¾% equals	\$40,700.00
13¾% of 2% of . . . . .	\$40,700.00		111.93
" . . . . .	111.93		.31
State tax . . . . .	\$ 4,000.00		
Less 2% of \$40,812.24	816.25	Federal tax	\$40,812.24
	\$ 3,183.75	state tax.	
		And that is all.	

\* \* \* \* \*

We may have a graduated federal tax—if so the algebra will be tedious. Here is the arithmetical solution. Assume that the first \$100,000 pays 12½%, the next 100,000 pays 14% and the rest pays 15%. The work is:

Taxable, federal . . . . .	\$300,000		
Less 2% of \$200,000 . . . . .	4,000		
	\$296,000		
\$100,000 at 12½% . . . . .			\$12,500.00
100,000 " 14% . . . . .			14,000.00
96,000 " 15% . . . . .			14,400.00
			\$40,900.00

*The Journal of Accountancy*

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2% of 15% (.3 of 1%) of \$40,900.....			\$122.70
"                    of \$122.70.....			.37
State tax.....	\$4,000.00	Federal tax	\$41,023.07
Less 2% of \$41,023.07.....	820.46		
			<hr/>
			\$3,179.54 state tax.
			<hr/>

Yours truly,

F. W. THORNTON

Denville, New Jersey, July 29, 1935.