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Roots

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For example, when the difference between n and m is two, then the following triangle results:

m/k	0	1	2	3	4	
0	1					
1	1	3				
2	1	8	6			
3	1	15	30	10		
4	1	24	90	80	15	(2)

where m is the number of cups of milk first and n is the number of cups of tea first. $2k$ is the number incorrect and $2m$-$2k$+2 is the number correct.

The element in the ith row in the resulting triangle in (2) is obtained from multiplying the element in the ith row and the element in the same column in the (i+2)th row in the Pascal triangle. In general, the triangle which results for any m and n is to multiply the ith row by the (i+n-m)th row.

The lack of symmetry when m is unequal to n implies that Pascal triangle approach loses some of its visual advantage over the combinatoric formula. Nevertheless, the Pascal triangle still displays some pictorial benefit.

PHILOSOPHICAL CONCLUSIONS

Being a scientist, Fisher's main purpose in this tea tasting scenario was to illustrate the ideas behind the design of experiments when psychology was combined with the physical. On the other hand, mathematicians often have a different agenda such as showing surprising and non-intuitive interconnections. That the tasting of tea as described by Fisher should lead to a quadratic Pascal triangle is esthetically pleasing to a mind with a mathematical bent. Just as important is the fact that when Fisher's scenario is altered to allow unequal (but known total cups of each), the Pascal triangle can be easily used to determine numerical results as the number of cups change; this is in contrast to the combinatoric formula which tends to hide what is taking place and is often difficult to calculate numerically.

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I think that I shall never see
The square root of the number three,
A number so irrational
It cannot be conceived at all.
Squares were made for fools like me,
But only God can root a three.