

Actually, $1 + 1/2 + 1/4 + 1/8 + \dots = 2$ isn't a real formula because “...” isn't a real operation. This “formula” is an abbreviation for the formula mathematicians usually write:

$$\sum_{i=0}^{\infty} 2^{-i} = 2$$

This in turn is an example of informal mathematical notation that can be challenging to make formal. A good exercise for mathematically sophisticated readers is to define an operator *InfiniteSum* so that if F is defined by

$$F(i) \triangleq 2^i$$

then the formula above can be written

$$\textit{InfiniteSum}(F, 0) = 2$$

However, if you're reading this section, you're probably not ready for such an exercise.

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