



Proof Without Words: The Alternating Harmonic Series Sums to $\ln 2$

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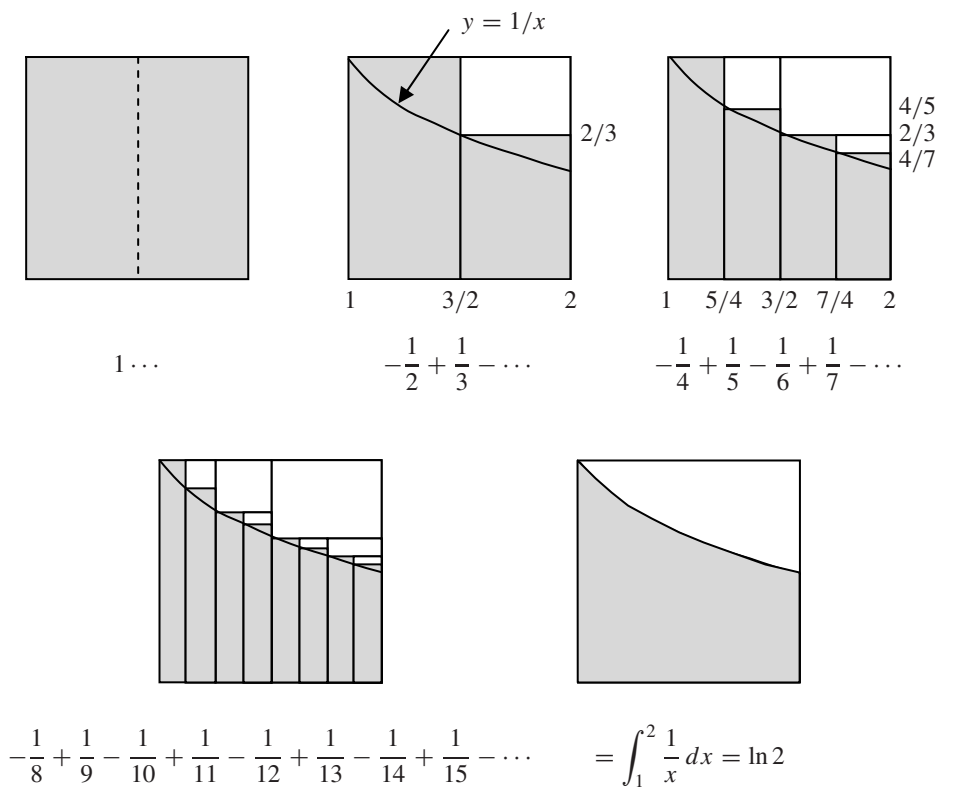


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CLAIM. $\sum_{n=0}^{\infty} (-1)^n \frac{1}{n+1} = \ln 2.$



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Summary We demonstrate graphically the result that the alternating harmonic series sums to the natural logarithm of two. This is accomplished through a sequence of strategic replacements of rectangles with others of lesser area. In the limit, we obtain the region beneath the curve $y = 1/x$ and above the x -axis between the values of one and two.