Harmonic series

The *harmonic series* is

$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \cdots$$

The sum of the first n terms of this series lies between $\ln n$ and $1 + \ln n$, but there is no simple formula for the sum.

The infinite harmonic series *diverges*:

$$\sum_{n=1}^{\infty} \frac{1}{n} = \infty.$$

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