



## BASEL PROBLEM

### Why

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### Problem

Consider the sequence  $(a_n)_{n \in \mathbf{N}}$  defined by

$$a_n = \frac{1}{n^2}.$$

Does  $\lim_{N \rightarrow \infty} \sum_{n=1}^N a_n$  exist? If so, what is the limit? These questions are known as the *Basel problem*.

### Solution

#### Proposition 1.

$$\lim_{N \rightarrow \infty} \sum_{n=1}^N s_n = \frac{\pi^2}{6}.$$
<sup>2</sup>

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<sup>1</sup>Future editions will include. Future editions may also rename this sheet.

<sup>2</sup>Future editions will include a proof.



