1 Math principle

$$\int_{1}^{n} \frac{1}{x}\,dx = [\ln|x|]_{1}^{n}$$
$$= \ln n - \ln 1 = \ln n \qquad (1)$$

2 Experiment data

slider n	myarea	mylog
3	1.0986	1.0986
6	1,7918	1.7918
9	2.1972	2.1972

Table 1: Data from GeoGebra

3 Observation

The animation and Equation (1) demonstrate that the area bounded by the function $f(x) = \frac{1}{x}$ on a specific interval $[1, n]$ can be used for computing the value of $\ln n$. In addition, as $n \to \infty$, the area is not finite because $\ln n \to \infty$.