§ 7.1 The Logarithm Defined As An Integral.

Define a function using an Integral

\[ f(x) = \int_{t=1}^{t=x} \frac{1}{t} \, dt \]

defines a function of \( x \) on \((0, \infty)\)

\[ \ln(x) = \int_{t=1}^{t=x} \frac{1}{t} \, dt \quad t \in (0, \infty). \]

So \( \ln(x) \)
is the area in the 1st quadrant under the curve \( \frac{1}{t} \) and between \( t=1 \) and \( t=x \).

(*) We also spent 45 min. reviewing logarithms.