The Lognormal Distribution

A variable which is lognormally distributed has probability density function

\[ p(x) = \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(\log x - \mu)^2}{2\sigma^2}\right), \]  

(1)

where \( \mu \) is the mean and \( \sigma \) is the standard deviation of \( \log x \).

Graph of (1) for \( \mu = 0, \sigma = 0.1, 0.5, 1 \) (in increasing order of thickness).