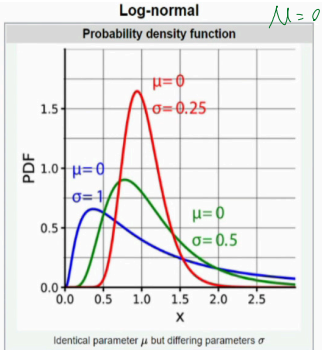
Log Normal Distribution

In probability theory, a log-normal (or lognormal) distribution is a continous probability distribution of a random variable whose logarithm is normally distributed. Thus, if the random variable X is log-normally distributed, then Y = In(X) has a normal distribution. Equivalently, if Y has a normal distribution, then the exponential function of Y, X = exp(Y), has a log - normal distribution.




Right skewed distribution

$X$ = Log Normal Distribution $(\mu, \sigma)$

$Y \approx \ln(X)$ = Normal Distribution

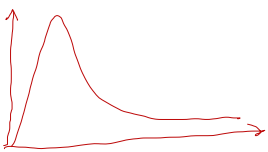
↓

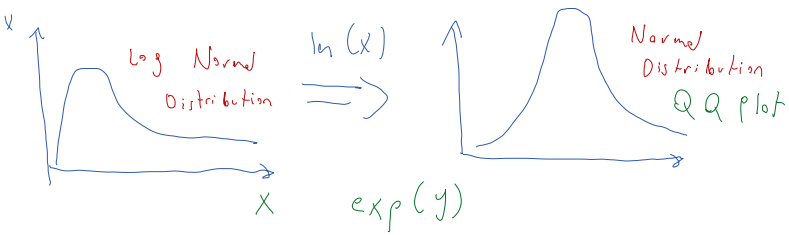
Natural log

[log e]

⇓

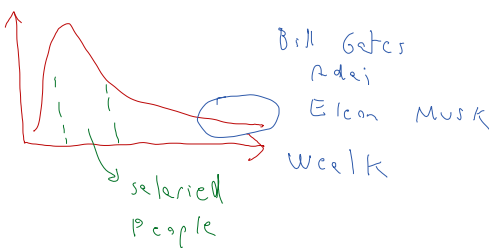
$X \approx \exp(y) \Rightarrow$ Log Normally Distributed






Examples:

1) Wealth distribution of the word




2) Discussion Forum → Length of the comments

3) Length of chess games

4) Dwell time on online articles (joke, news)