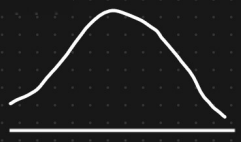
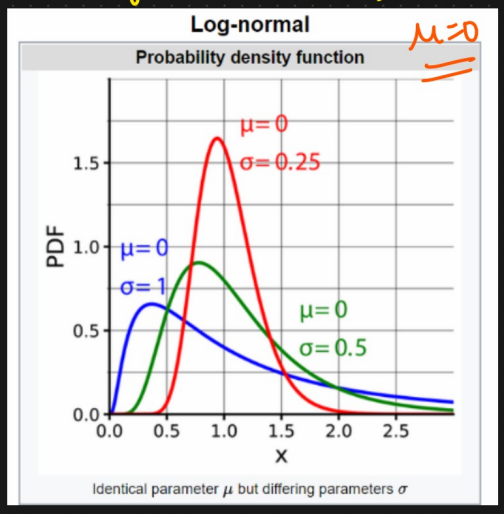
① Log Normal Distribution



Empirical Rule

In probability theory, a log-normal (or lognormal) distribution is a continuous probability distribution of a random variable whose logarithm is normally distributed. Thus, if the random variable X is log-normally distributed, then Y = ln(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



$\mu = 0$

$X \approx$ Log Normal Distribution(μ, σ)

⇓

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

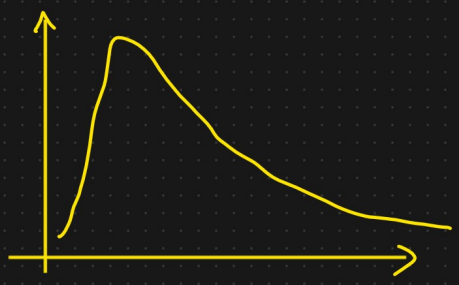
⇓

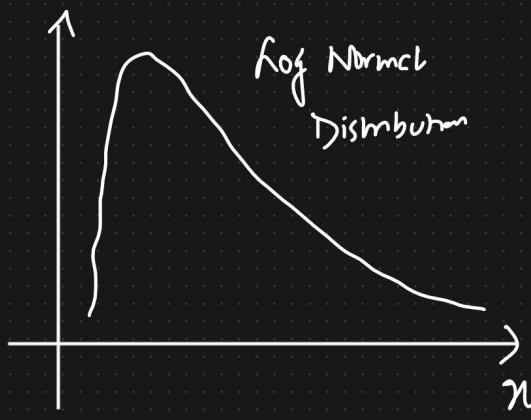
Natural log

$[\log_e]$

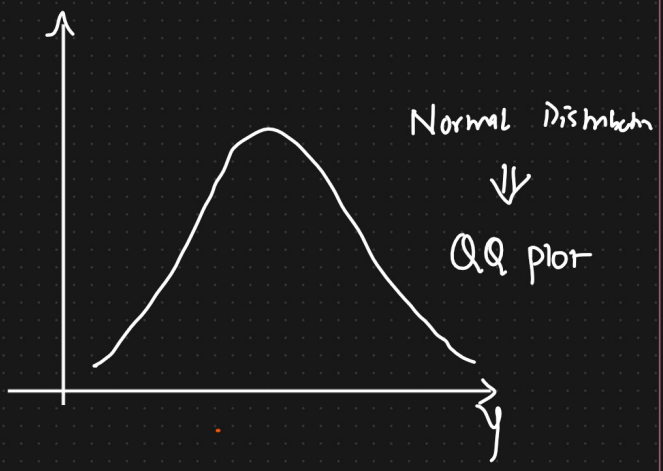
⇓

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

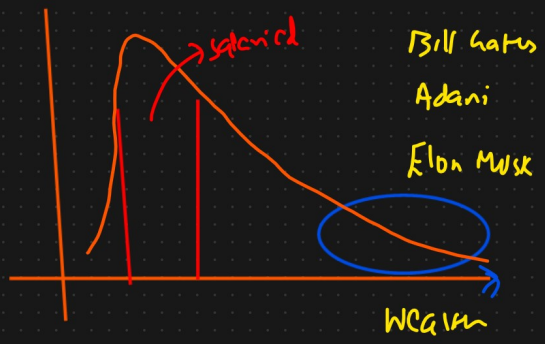




$\ln(x)$ ⟹ $\exp(y)$



Eg :



① Wealth distribution of the world

② Discussion Forum → length of the comments

③ length of chess games

④ Dwell time on online articles (joke, news)

⑤ Salaries of employees in a company.