Standard Normal Variate (Z)

① $Z \sim N(0,1)$

$\mu = 0$

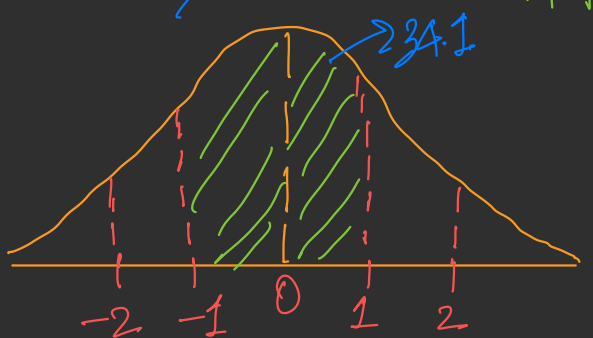
$\sigma^2 = 1$

② Let $X \sim N(\mu, \sigma^2)$

$\rightarrow [x_1, x_2 \ldots x_{50}]$

↓

Actual observations



Standardize

Standardization

$$x_i' = \frac{x_i - \mu}{\sigma}$$

68% of x_i' lies -1 & +1

95% of x_i' lie b/w -2 & +2

$i = 1, 2, \ldots 50$

$x_i' \sim N(0,1)$

→ Standard Normal Variate

$X \sim N(\mu, \sigma^2)$ (why?)

$$Z = \frac{X - \mu}{\sigma}$$

$Z \sim N(0,1) \rightarrow$ Std