

• Sampling of  $\bar{X}$

Mean( $\bar{X}$ ) =  $\mu$

Variance ( $\bar{X}$ ) =  $\frac{\sigma^2}{n}$

Standard deviation( $\bar{X}$ ) =  $\frac{\sigma}{\sqrt{n}}$

• Distribution of  $\bar{X}$  :

If population Normal or non-normal( n ≥ 30)

$$\bar{X} \sim \text{Normal}(\mu, \frac{\sigma^2}{n})$$

• Transform to Z or T (To use tables )

✚ If  $\sigma$  Known

\* If  $\sigma$  unknown (use S instead), normal

$$Z = \frac{\bar{X} - \mu}{\sigma / \sqrt{n}}$$

$$T = \frac{\bar{X} - \mu}{S / \sqrt{n}}$$

How to use T-Table :

طريقه اخرى لكتابة الاحتمال

1)  $t_{0.95} = ?$  (df=10)

1)  $P(T < K) = 0.90,$  (df =5)

2)  $t_{0.90} = ?$  (df =12)

2)  $P(T \geq K) = 0.95,$  (df =15)

3)  $t_{0.05} = ?$  (df=20)

3)  $P(T \leq 2.110) = ?$  (df =17)

4)  $t_{0.10} = ?$  (df=5)

4)  $P(T \leq 2.718) = ?$  (df =11)

