

ASSIGNMENT ON Confidence Interval

$S = 30, n = 1000, \mu = 180, 95\% \text{ C.I.}$

(i) $SE = \frac{S}{\sqrt{n}} = \frac{30}{\sqrt{1000}} = \frac{30}{31.62} = .95$

$$\begin{array}{l|l} 180 - 1.96 \times .95 & 180 + 1.86 \\ 180 - 1.862 & \\ \hline 178.13 & = 181.86 \end{array}$$

(ii) $n = 120$
 $\bar{x} = 16.2$
 $\sigma = 3.6$
 $92\% \text{ C.I.} = 1.75$

(a) $16.2 \pm (1.75) \frac{3.6}{10.96}$

$$16.2 \pm (1.75) \cdot 3.2$$

$$16.2 \pm .57$$

$$\underline{15.63} \quad \underline{16.77}$$

(b) $Z = 15 \text{ sec. } .25$

$$1.75 \times \frac{3.6}{\sqrt{n}} = .25$$

$$\sqrt{n} = \frac{3.6 \times 1.75}{.25} = \underline{63}$$

Q.3

(a) 2% margin = .02

$p = .5$

90% conf: = 1.645

(b) $\frac{-400}{1000} = .4$

$n = 1000$

95% conf.

$$Z = \frac{1.96}{\frac{\sqrt{.4 \times (1-.4)}}{1000}} = \frac{1.96}{\sqrt{\frac{.4 \times .6}{1000}}}$$

$$= .4 \pm \frac{1.96}{\sqrt{\frac{.24}{1000}}} = \frac{1.96}{\sqrt{.00024}} = 1.0154$$

$$= .4 \pm 1.96 \times 0.0154$$

$$= .4 \pm 0.0305$$

$$.36948 \text{ } .4306$$