Assignment # 4
STA301

Question # 2:

Solution Of part a:

$$e = 0.30\sigma$$

$$1-\alpha = 0.90$$

$$\alpha = 0.1$$

$$n = \left(\frac{Z_{1-\frac{\alpha}{2}}}{e} \right)^2$$

$$Z_{1-\frac{\alpha}{2}} = Z_{0.95}$$

see the value of in Z table

$$Z_{0.95} = 1.6449 = 1.645\alpha$$

$$n = \left(\frac{1.645\sigma}{0.30\sigma} \right)^2$$

$$n = 30.07$$

Solution of part b:

$$\mu = 30 \text{ , } \sigma = 5 \text{ , } n = 50$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$$

$$\sigma_{\bar{x}} = \frac{5}{\sqrt{50}}$$

$$\sigma_{\bar{x}} = 0.707$$