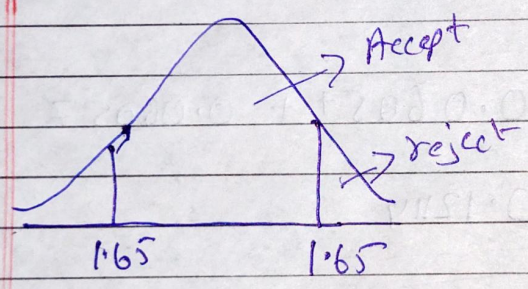


(3) (i) Null Hypothesis $H_0: P \geq 60\%$ $H_1: P \leq 60\%$ 1 tail

$$n = 250, \quad x = 170, \quad \hat{p} = \frac{x}{n} = \frac{170}{250} = 0.68$$

$$\begin{aligned} P_0 - q_0 &= 1 - P_0 = 1 - \frac{60}{100} = 0.4 \\ &= 1 - 0.6 = 0.4 \end{aligned}$$

$$\alpha = 0.10$$



* Z-test with Proportion:-

$$Z\text{-test} = \frac{\hat{p} - P_0}{\sqrt{\frac{P_0 - q_0}{n}}}$$

$$= \frac{0.68 - 0.60}{\sqrt{\frac{0.6 \times 0.4}{250}}}$$

$$\frac{0.08}{\sqrt{\frac{0.24}{250}}}$$

$$= \frac{0.08}{0.0309}$$

$$= 2.58$$

$= 2.58 > 1.65$ { Accept the Null Hypothesis

z-table :- 1.65
↓

Revalues

$$1 - 0.93943 = 0.06057$$

$$P. Value = 0.06057 + 0.06057$$

$$P. Value = 0.12114$$