

28/08

A car company believes that the percentage of accidents in city ABC that owns a vehicle is 60% or less. A sales manager disagrees with this. He conducts a hypothesis testing surveying 250 residents and found that 170 responded yes to owning a vehicle.

a) State H_0 & H_1

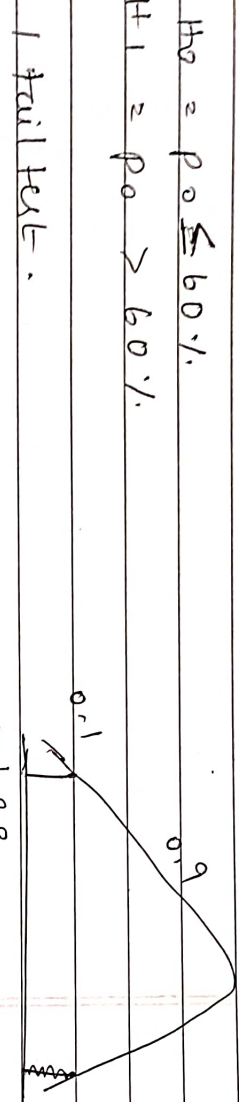
b) At 10% sig level, is there enough evidence to support the idea that vehicle ownership in city ABC is 60% or less.

$n = 250$, $p_0 = 170$ p-value = 0.014

$p_0 = 60\%$

1) $H_0 = p_0 \leq 60\%$

$H_1 = p_0 > 60\%$



$q_0 = 1 - p_0 = 1 - 0.6 = 0.4$

2) $\alpha = 0.1$

3) $n = 250$ Z test.

$$Z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0 q_0}{n}}} = \frac{0.68 - 0.6}{\sqrt{\frac{0.6 \times 0.4}{250}}}$$

$$= \frac{0.08}{0.03098} = 2.5823$$

0.03098

$$Z_{2.58} = 0.99506$$

$$P\text{ value} = 0.995$$

$$P\text{ value} > \alpha$$

$$0.995 > 0.1$$

Accept Null hypothesis.