Assignment 4 - Confidence Interval

* A Car Company believes that the percentage of residents in city ABC that owns a vehicle is 60% or less. A Sales Manager disagrees with this. He conducts a hypotesis testing surveying 250 residents and found that 170 responded yes to owning a vehicle.

a) State the Null & Alternate hypothesis
b) At 10% Significance level, is there enough evidence to support the idea that vehicle ownership in city ABC is 60% or less?

$H_0 : P_. = < 60\%$

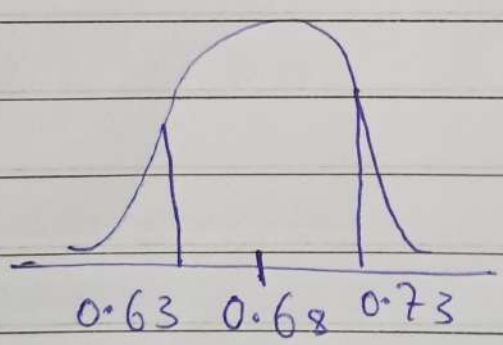
$H_A : P_. > 60\%$

$$\hat{P} = \frac{170}{250} = 0.68$$

$n = 250$ yes $= 170$

$$\hat{P} \pm 2 \times \sqrt{\frac{\hat{P}(1-\hat{P})}{n}}$$

$$= 0.68 \pm 1.645 \times \sqrt{\frac{0.68\,(1-0.68)}{250}}$$



With 90% Confidence interval we will reject the null hypothesis Since the percentage of residents owning the vehicle is between 63% to 73%.