Que 3) A car believes that the percentage of citizens in city ABC that owns a vehicle is 60% or less. A sales manager disagrees with this. He conducted a hypothesis testing surveying 250 residents & found that 170 residents responded yes to owning a vehicle.

1. State the null & alternate hypothesis.
2. At a 10% significance level, is there enough evidence to support the idea that vehicle owner in ABC city is 60% or less.

**Answer:**

1. Null Hypothesis =

H0= P0 < 60%

H1= P0 > 60%

1. ^P1 =x/n =170/250 =0.68
2. If P0 is given can find out Q0

Q0 = 1- P0 1-0.68 =0.32

1. Significance value = 0.10, C.I = 0.90
2. Decision Value – 1.209
3. Z-test =

0.68 -0.60/ (√0.60 \* 0.32 /250)

=0.08/√0.000768 =0.08/0.027713

=2.886751

**Conclusion = we reject the Null Hypothesis**

Que 4) What is the value of the 99 percentile?

2,2,3,4,5,5,5,6,7,8,8,8,8,8,9,9,10,11,11,12

**Answer:**

=99/100(20+1)

=99/100(21)

=20.79 [index]

=99percentile value = 12

Que 5) In left & right-skewed data, what is the relationship between mean, median & mode?

Draw the graph to represent the same.

**Answer:**

if the distribution of data is skewed to the left, the mean is less than the median, which is often less than the mode. If the distribution of data is skewed to the right, the mode is often less than the median, which is less than the mean.

**Right Skewed:**

Mode Mean Median

**Left Skewed:**

Mean Median mode