# Statistics Assignments

# Question-1 plot a histogram, 10,13,18,22,27,32,38,40,45,51,56,57,88,90,92,94,99

# D:\Ineuron-Stats Assignment\Stats-assignment-1.jpg

**Question 2**- In a quant test of the CAT Exam, the population standard deviation is known to be 100. A sample of 25 tests taken has a mean of 520. Construct an 80% CI about the mean.

# D:\Ineuron-Stats Assignment\Stats-assignment-2.jpg

**Question-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.

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# D:\Ineuron-Stats Assignment\IMG_20220802_181340.jpg

# Question-5 What is the relationship between mean, median and mode in left and right skewed distribution?

# Relationship between Skewness and the Mean, Median, and Mode

# Relationship_between_mean_and_median_under_different_skewness.png

**A B C**

**(fig.1)**

In a positively skewed distribution, the median and mode would be **to the left of the mean**. That means that the mean is greater than the median and the median is greater than the mode (Mean > Median > Mode) that is shown in the above diagram A (fig.1).

In a negatively skewed distribution, the median and mode would be **to the right of the mean**. That means that the mean is less than the median and the median is less than the mode (Mean <Median < Mode) that is shown in the above diagram C (fig.1).

To summarize, generally 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.