Distributions

LLE – Mathematics and Statistics Skills

1. Consider the following dataset:

$$34, 35, 35, 36, 40, 40, 40, 40, 41, 42, 44, 47$$

   (a) Find the mean of the dataset above. (Round to two decimal places if necessary)

   (b) Find the median of the dataset above.

   (c) Find the range of the dataset above.

2. For the data in Question 1, we will change the final three data points ($42, 44,$ and 47) to $50, 65,$ and 100.

   The new dataset is: $34, 35, 35, 36, 40, 40, 40, 40, 41, 50, 65, 100$.

   (a) Recalculate the median of the new dataset.

   (b) Recalculate the mean of the new dataset. (Round to two decimal places if necessary)

   (c) What do you notice about the values for the median and mean between Question 1 and Question 2?

   (d) What type of skew is shown in the data for Question 2?

   ○ Negative (left) ○ Positive (right) ○ Symmetrical

3. Consider the following three sets of data:

   Set A: $12, 13, 15, 15, 16, 16, 16, 17, 17, 19, 20, 20$
   Set B: $3, 5, 5, 9, 16, 21, 22, 30, 33$
   Set C: $21, 24, 25, 26, 26, 27, 27, 27, 27, 28, 29, 30$

   (a) For each set of data, calculate the summary statistics of the median, the mean, and the range.

(b) Compare and contrast the three datasets based on their summary statistics.

4. Summary statistics are provided for three sets of data:

   Set A: Mean = 45.4, Median = 33, SD = 6.8, Skew = 1.6

   Set B: Mean = 34.2, Median = 33.5, SD = 2.3, Skew = 0.21

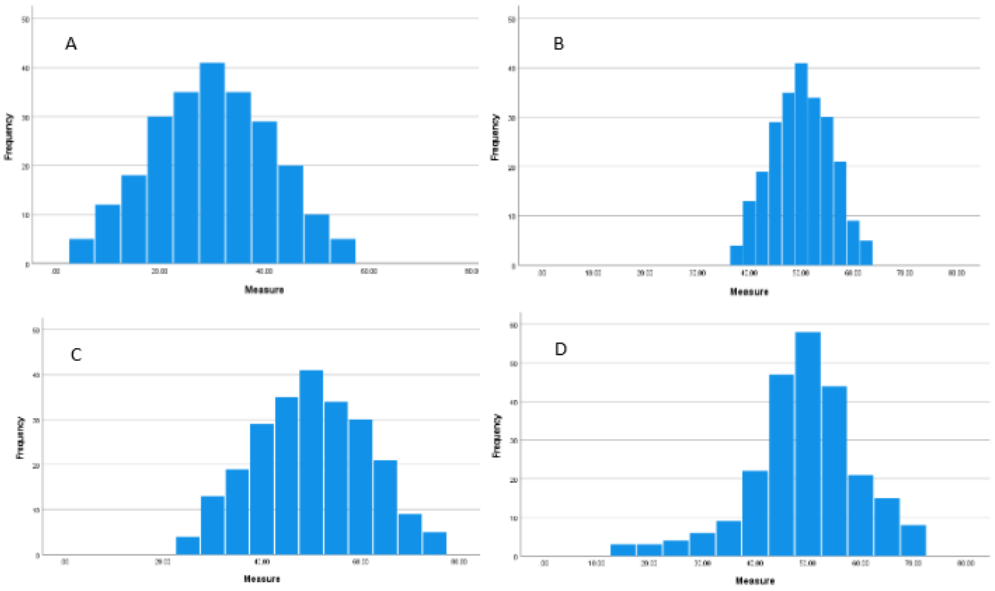
   Set C: Mean = 33, Median = 33.6, SD = 0.9, Skew = -0.12

   (a) Which dataset had the least dispersion (least spread of data)?

   (b) Which dataset had the most skew, and in what direction was the skew?

   (c) Compare and contrast the three datasets.

5. Consider the following histograms and statistics:



Statistic	Set 1	Set 2	Set 3	Set 4
Mean	49.2	29.9	50	49.9
Median	50	30	50	50
Standard Deviation	10.5	11.4	5.7	11.4
Skew	-0.64	0	0	0

Match each of the histograms to one of the sets of statistics provided above.