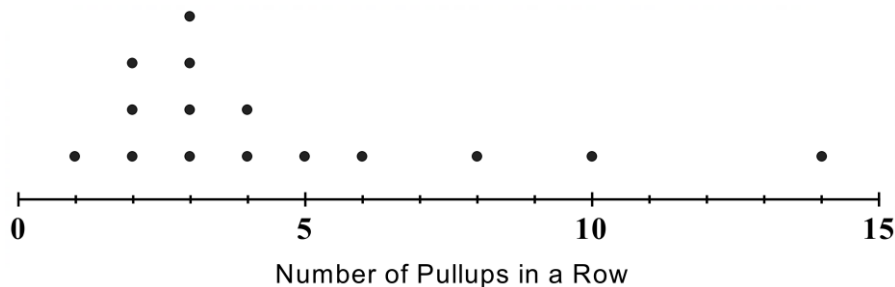


When a data set is **symmetric** about its central values, then both measures of center and measures of variability work well. When a distribution is **skewed** it is a different matter.

Exercise #2: Mateo is trying to answer the question: “How many pullups can a typical 7th grade student do?” He takes a random sample of 15 7th grade students to see how many pullups they can do in a row.

The data is shown on the dot plot at the right.



- (a) Determine the median and the interquartile range of the data set.

- (b) Why do you think this data distribution is referred to as **skewed to the right**?

- (c) Find the mean of the data set to the nearest tenth. Draw it as a dashed line on the number line. Why would this *not* be a good measure of center of the data set?

- (d) Mateo uses a spreadsheet to find that the mean absolute deviation of the data set is 2.7. Why would this *not* be a good measure of the typical amount a data value is away from the center?

- (e) Make a summary statement about this data set using the median and interquartile range.

In general, if a distribution is **skewed (not symmetric)** then it is best to use the **median** and the **interquartile range** to describe the data set.



Name: _____

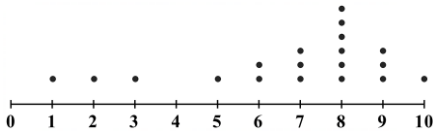
Date: _____

CHOOSING APPROPRIATE STATISTICS N-GEN MATH[®] 7 HOMEWORK

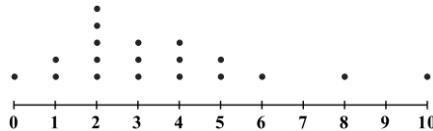
FLUENCY

1. Which of the following data distribution is skewed to the left?

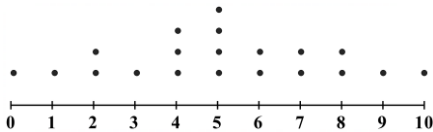
(1)



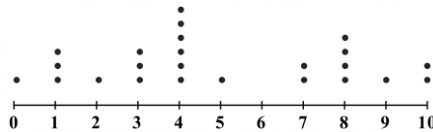
(3)



(2)



(4)



2. For the data shown below which of the following is true about the interquartile range (IQR) versus the mean absolute deviation (MAD)?

(1) $IQR = 2 \times MAD$

8, 10, 10, 12

(2) $MAD = 2 \times IQR$

(3) $IQR > 2 \times MAD$

(4) $MAD > 2 \times IQR$

3. When a data distribution is *not* symmetric, which of the following should be used to summarize the central value and the variability of the data set?

(1) the mean and mean absolute deviation

(2) the median and the mean absolute deviation

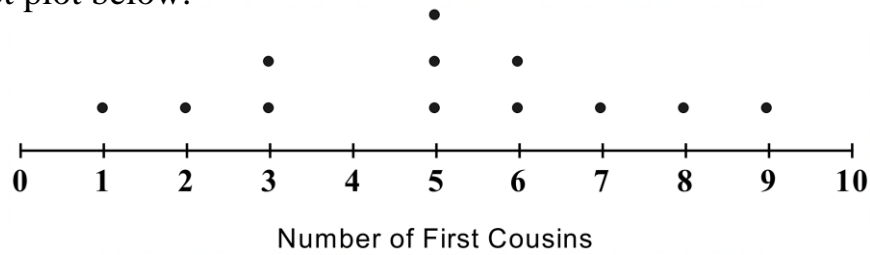
(3) the mean and the interquartile range

(4) the median and the interquartile range



USING YOUR MATH

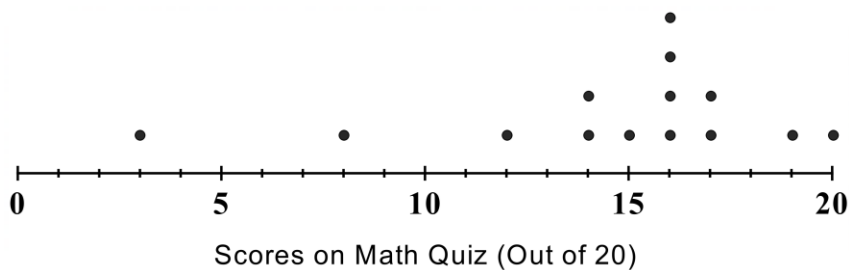
4. A sample of 12 students was asked how many first cousins each of them had. The results are shown on the dot plot below.



- (a) Find the mean and the mean absolute deviation for this data set. Round the value of the MAD to the nearest tenth.

- (b) Why would it be appropriate to use the two measures in (a) to summarize this data set?

5. Ms. Gomez would like to understand how well her students learned how to add and subtract integers. She gives a 20-question quiz to her 14 students and collects the following data.



- (a) Which measure of center and which measure of variation are most appropriate to use when describing this data set? Why?

- (b) Find the two measures.

