Name_____ Date_____
Teacher_____

Answer Key

6th Grade Math (Statistics) Enrichment #8 (Lesson 29-2)

## Ready:

1. In your own words, summarize what MAD tells you about the variability of a distribution.

MAD tells you the average distance of each data point from the mean.

2. Consider the following 3 data sets. All of the data values are whole numbers.

(a) Calculate the mean of each data set. $\text{mean}_A = \frac{60+64+65+66+70+80+80+84+85+8}{10} = 74$

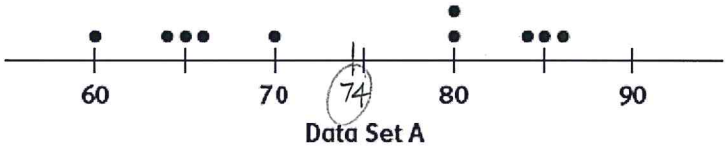
$\text{mean}_B = 58$ $\text{mean}_C = 30$

(b) The three data sets have MAD values of 7, 9 and 11. Match the data sets to the appropriate MAD value without actually making a calculation.

| Data | distance from mean |
|---|---|
| 60 | 14 |
| 64 | 10 |
| 65 | 9 |
| 66 | 8 |
| 70 | 4 |
| 80 | 16 |
| 80 | 6 |
| 84 | 10 |
| 85 | 11 |
| 86 | 12 |

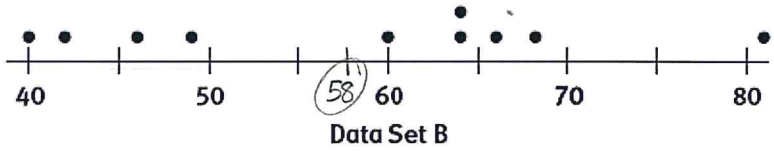
$MAD = \frac{90}{10} = 9$

MAD = 9



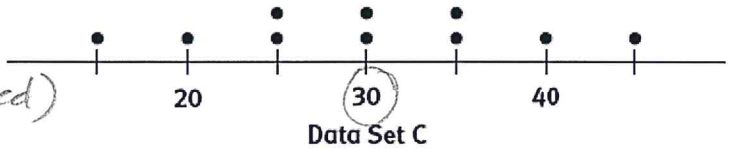
Data Set A

MAD = 11 (outliers)



Data Set B

MAD = 7 (most evenly distributed)



Data Set C

3. Verify the MAD value for <u>one</u> of the data sets in part b. $MAD = \frac{90}{10} = 9$

## Set:

4. (a) Evaluate: $3 \div \frac{2}{5}$. Write a story problem for this fraction division problem.

$3 \div \frac{2}{5} = 3 \cdot \frac{5}{2} = \frac{15}{2} = 7.5$

Nancy has 3 feet of ribbon and wants to know how many pieces she gets if she cuts it into $\frac{2}{5}$ feet of ribbon.

(b) If a steak costs \$2.25 per pound, how much does 0.8 pounds of steak cost?

x = cost of steak (\$)

$x = 0.8(2.25)$

$x = \$1.80$

5. Brenna has the following data: 16 11 20 15 ☐
If the median is 16, what number could be in the box?

11, 15, 16, [18], 20

Answers may vary, any # greater than or equal to 16.

**Go:**

6. Susan has four 20-point projects for math class. Susan's scores on the first 3 projects are shown below:

| | |
|---|---|
| Project 1: | 18 |
| Project 2: | 15 |
| Project 3: | 16 |
| Project 4: | ?? |

$$\text{mean} = \frac{18+15+16+x}{4} = 17$$

$$\frac{49+x}{4} = 17$$

$$49 + x = 68$$

$x = 19$

What score does she need to make on Project 4 so that the mean for the four projects is 17? Explain your reasoning. Susan needs to earn a score of 19. If you are trying to get to 17 then you take one away from 18 to give to 16 and you need 2 more to add to 15 to get to 17, which means you need the score to be 19.

7. What is the MAD for the data set above including the score that you calculated for Project 4.

| Data | distance from 17 |
|---|---|
| 18 | 1 |
| 15 | 2 |
| 16 | 1 |
| 19 | 2 |

$$MAD = \frac{6}{4} = 1.5$$

8. What does a large value for MAD tell you about the data?

A large value for MAD means that the data has a lot of variability, or maybe has an outlier that is skewing the data.