

3-16-18

Aim: SWBAT do their best on the quiz.

HW: Toss a coin 50 times. Record the results on Packet Page 39.

Do Now: Correct hw

Homework - Mean Absolute Deviation

1. The number of pages in books read by sixth and seventh grade students during one semester are shown below.

Sixth Grade: 125, 132, 150, 137 $\frac{544}{4} = 136$

Seventh Graders: 198, 174, 208, 120 $\frac{700}{4} = 175$

- A) Find the Mean Absolute Deviation (MAD) of pages read by sixth graders.

$|125-136| = |-11| = 11$ $|150-136| = |14| = 14$ $\frac{11+4+14+1}{4} = \frac{30}{4}$
 $|132-136| = |-4| = 4$ $|137-136| = |1| = 1$
 $= 7\frac{1}{2}$

- B) Find the Mean Absolute Deviation (MAD) of pages read by seventh graders.

$|198-175| = |23| = 23$ $|120-175| = |-55| = 55$
 $|174-175| = |-1| = 1$
 $|208-175| = |33| = 33$ $\frac{23+1+33+55}{4} = \frac{112}{4} = 28$

- C) Compare the MAD's. The variability in the number of pages read by the seventh graders is almost 4 times the variability in the number of pages read by the sixth graders.

Use the following information to answer questions 2 & 3.

Paula's grades on her history tests this semester are 79, 93, 92, 86, and 90. $\frac{440}{5} = 88$

2. Which shows the deviation of each of her grades from her mean grade?

- a. -9, 5, 4, -2, 2 c. -11, 6, 5, -4, 4
 b. -8, 6, 3, -3, 2 d. -14, 9, 5, -3, 2

3. What is the mean absolute deviation (MAD) of Paula's history grades?

- a. 0 $\frac{22}{5}$ b. 4.2 c. 4.4 d. 22

Use the following information to answer questions 4 - 6.

The lengths, in seconds, of four folk songs are 128, 165, 182, and 141. $\frac{616}{4} = 154$

The lengths, in seconds, of four pop songs are 90, 98, 102, and 94. $\frac{26+11+28+13}{4} = \frac{78}{4} = 19.5$

$\frac{384}{4} = 96$

$\frac{6+2+6+2}{4}$

$\frac{16}{4} = 4$

4. What is the mean absolute deviation, in seconds, of the folk songs?

- a. 18 b. 18.25 c. 19.5 d. 19.75

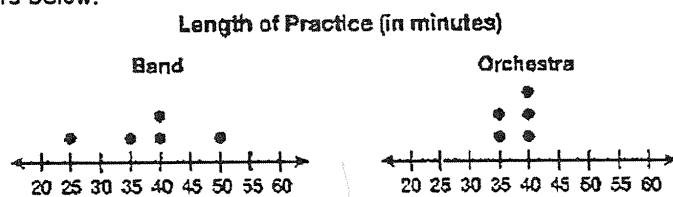
5. What is the mean absolute deviation, in seconds, of the pop songs?

- a. 2 b. 4 c. 6 d. 8

6. Which of the following statements is true?

- a. The variability in the times of the folk songs is about half that of the pop songs
- b. The variability in the times of the folk songs is about twice that of the pop songs
- c. The variability in the times of the folk songs is about 3 times that of the pop songs
- d. The variability in the times of the folk songs is about 4 times that of the pop songs

7. The lengths, in minutes, of the school band and orchestra practices are shown in the dot plots below.



A. What is the mean absolute deviation, in minutes, of the length of each group's practice?

$$\text{Mean} = \frac{25 + 35 + 40 + 40 + 50}{5} = \frac{190}{5} = 38$$

$$\text{MAD} = \frac{|3+3+2+2+12|}{5} = \frac{32}{5} = 6.4$$

$$\text{Mean} = \frac{35 + 35 + 40 + 40 + 40}{5} = \frac{190}{5} = 38$$

$$\text{MAD} = \frac{|3+3+2+2+2|}{5} = \frac{12}{5} = 2.4$$

B. Compare the MADs. (How does the variability in the length of band practice compare to the variability in the length of orchestra practice?) Explain your thinking.

The BAND's practice has a high variability compared to the Orchestra's low variability. On average, band practice was 6.4 minutes from the mean and on average, orchestra practice was 2.4 minutes from the mean.