

HW: Worksheet

Warm up:

Find the mean for each student.

Math Test Grades

Student A {82, 88, 84, 86, 80}

$$\frac{420}{5} = 84$$

Student B {89, 57, 98, 76, 100}

$$\frac{420}{5} = 84$$

The mean absolute deviation (MAD) measures how much the data points in a set vary from the mean.

A)

$$\begin{aligned} |84 - 82| &= 2 \\ |84 - 88| &= 4 \\ |84 - 84| &= 0 \\ |84 - 86| &= 2 \\ |84 - 80| &= 4 \end{aligned}$$

$$\frac{2 + 4 + 0 + 2 + 4}{5} = \frac{12}{5} = 2.4$$

$$\text{MAD} = 2.4$$

Student A {82, 88, 84, 86, 80} $\text{mean} = 84$

Student B {89, 57, 98, 76, 100} $\text{mean} = 84$

$$\text{MAD} = 14$$

$$\begin{aligned} 89 - 84 &= 5 \\ 84 - 57 &= 27 \\ 98 - 84 &= 14 \\ 84 - 76 &= 8 \\ 100 - 84 &= 16 \end{aligned}$$

$$\frac{5 + 27 + 14 + 8 + 16}{5} = \frac{70}{5} = 14$$

6, 9, 6, 9, 8, 10

$$\text{mean} = \frac{6+9+6+9+8+10}{6} = \frac{48}{6} = \textcircled{8}$$

MAD

$$\begin{array}{r} 8-6 = 2 \\ 9-6 = 3 \\ 8-6 = 2 \\ 9-6 = 3 \\ 8-6 = 2 \\ 10-6 = 4 \end{array}$$

$$\frac{2+3+2+3+2+4}{6} = \frac{16}{6} = 2.\overline{6}$$

$$\text{MAD} \approx 1.33$$

Paula's grades on her history tests this semester are 79, 93, 92, 86, and 90. Find the mean and MAD.

$$\text{mean} = \frac{440}{5} = 88$$

MAD

$$\begin{aligned} 88 - 79 &= 9 \\ 93 - 88 &= 5 \\ 92 - 88 &= 4 \\ 88 - 86 &= 2 \\ 90 - 88 &= 2 \end{aligned}$$

$$\frac{9 + 5 + 4 + 2 + 2}{5} = \frac{22}{5} = 4.4$$

$$\text{MAD} = 4.4$$

Lengths of folk songs (seconds): $154 - 128 = 26$
 $128, 165, 182, 141$ $\text{mean} = 154$ $165 - 154 = 11$
 $\text{MAD} = 19.5$ $182 - 154 = 28$
 $154 - 141 = 13$

Lengths of pop songs (seconds):

$90, 98, 102, 94$ $\text{mean} = 96$ $96 - 90 = 6$
 $\text{MAD} = 4$ $98 - 96 = 2$
 $102 - 96 = 6$
 $96 - 94 = 2$

Practice

① hydro
mean = 30
MAD = 11.33

finish
mean = 30
MAD = 5.66

②	<u>Pal</u>	<u>Quechua</u>
mean	38	38
MAD	6.4	2.4

