

Mean, Median, Mode

4/1/20

What is a measure of Center:

- a measure that describes the typical value of a data set. Mean, median, & mode are all measures of center.
- taking a data set & finding a typical value

Ex1. What is the mean : Average

to find $\frac{\text{sum}}{\text{\# of values}}$

Text messages Sent

Sean: 120

Emma: 95

Stanley: 101

Stacey: 125

Kenn: 82

Michelle: 108

Katie:

In order least to greatest

82, 90, 95, 101, 108, 120, 125

Sum: 721

\# of values: 7

$\frac{721}{7} \rightarrow 103$ text messages

You Try Problems

49, 62, 52, 54, 61, 70, 55, 53

49, 52, 53, 54, 55, 61, 62, 70

$\frac{456}{8} \rightarrow 57$

7.2, 8.5, 7.0, 8.1, 6.7

6.7, 7.0, 7.2, 8.1, 8.5

$\frac{37.5}{5} \rightarrow 7.5$

Ex2: Identify outlier

Outlier: a data value that lies "outside" a lot greater or less than the other values

Pony Heights (in)

40, 37, 39, 40, 42, 38, 38, 37, 28, 40

28, 37, 37, 38, 38, 39, 40, 40, 40, 42

(B) mean: $\frac{379}{10} \rightarrow 37.9$ in

(A) Outlier: 28

(C) mean w/o outlier: $\frac{351}{9} \rightarrow 39$ in

*outliers affect the mean

you try

3. 48, 50, 55, 60, 8, 37, 50
8, 37, 48, 50, 50, 55, 60
Outlier: 8

mean w/ outlier $\frac{308}{7} \rightarrow 44 \text{ lbs}$

pulled mean down

mean w/o outlier $\frac{300}{6} \rightarrow 50 \text{ lbs}$

4. 456, 512, 516, 900, 436, 516
436, 456, 512, 516, 516, 900
Outlier: 900

mean w/ outlier: $\frac{3336}{6} \rightarrow 556$

pulled mean up

mean w/o outlier: $\frac{2436}{5} \rightarrow 487.2$

Ex3 Find median & mode

Median: value in the middle * must be in order least to greatest

mode: # that occurs the most * can have 1, more than 1, or no mode

120, 135, 160, 125, 90, 205, 160, 175, 105, 145 * if odd #, it's the middle

90, 105, 120, 125, 135, 145, 160, 160, 175, 205 * if even #, you must find mean of 2 middle #'s

$\frac{135+145}{2} \rightarrow 140$ median

mode: 160 - happens most

* mode can be used for non-numerical values; fav colors, etc.

you try

1. 20, 4, 17, 8, 12, 9, 5, 20, 13
4, 5, 8, 9, 12, 13, 17, 20, 20
median

mode: 20

2. 100, 75, 90, 80, 110, 102
75, 80, 90, 100, 102, 110
 $\frac{90+100}{2} \rightarrow 95$ median

mode: no mode