

12-2: Measure of Central Tendency

Objectives:

I can identify the mean, median and mode from a set of data

I can solve for a value given data and mean

Measures of Central Tendency

Mean:

$$\text{average} = \frac{\text{sum of data}}{\# \text{ of data points}}$$

Median:

Middle → Line up data in order cross off outside and get to MIDDLE

Mode:

Most → Most often response

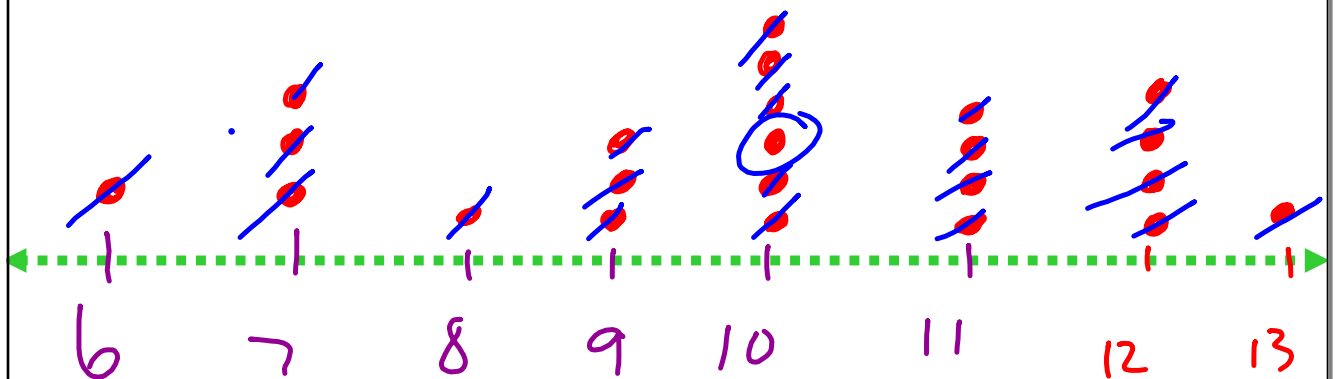
- 1 mode
- Multiple
- no mode

Range:

Spread Highest - lowest

Shoe size activity:

Get everyone's shoe size and make a dot plot. Then find the mean, median, mode and range of the classes shoe sizes.



Mean:

$$\frac{227}{23} = 9.9$$

Mode: 10

Median:

10

Range:

$$13 - 6 = 7$$

Test scores from a class: 70, 70, 75, 75, 90, 70, 80, 85, 65, 95, 70, 85, 90, 70, 20

Mean: $\bar{X} = 74$

Median: 75

Mode: 70

Range: $95 - 20 = 75$

w/o 20

$\bar{X} = 77.9$

Med = 75

Mode = 70

$95 - 65 = 30$

The salaries of the LA Lakers (who makes more than a million a year) for
the 2013-2014 season

Kobe Bryant: \$30,453,805	Pau Gasol: \$19,285,850
Steve Nash: \$9,300,500	Jordan Hill: \$3,563,600
Chris Kaman: \$3,183,000	Jodie Meeks: \$1,550,000
MarShon Brooks: \$1,210,080	Nick Young: \$1,106,942
Jordan Farmar: \$1,106,942	Chris Duhon: \$1,500,000

Mean:

≈ \$7,000,000

Median:

≈ 2,366,500

Mode:

Range:

Find the value of x such that the data set has a given mean:

98, 122, 104, 112, 108, x ; mean 101

$$\frac{98 + 122 + 104 + 112 + 108 + x}{6} = 101.6$$

$$\frac{606 + x}{6} = 101.6$$

$$\begin{array}{r} 606 + x = 606 \\ - 544 \quad - 544 \\ \hline \end{array}$$

$$x = 62$$

The average height of 7 basketball players is 76 inches. Six of the players height in inches are 72, 79, 69, 78, 76, and 73. What is the height of the seventh player?

$$\frac{72 + 79 + 69 + 78 + 76 + 73 + X}{7} = 76.7$$

$$\begin{array}{r} 447 + X = 532 \\ -447 \quad -447 \\ \hline X = 85 \end{array}$$

You have scored an 86, 72, 69, and 91 on tests for the quarter. You have to take one more test this quarter. What grade do you need to get on the last test to get an 80 in the class?

$$\frac{86 + 72 + 69 + 91 + x}{5} = 80.5$$

$$\begin{array}{r} 318 + x = 400 \\ - 318 \quad - 318 \end{array}$$

$$x = 82$$

