

# 11.1 Mean & Range

***Objective: To calculate the mean and range.***



# Mean

**Mean** – The sum of the values in a data set divided by the number of values in the set. Similar to average.

**Example:** {95, 88, 75, 68}

**Step 1:** Add all of the values:  $95+88+75+68 = 326$

**Step 2:** Count the number of values in the set: 4

**Step 3:** Divide the sum by the number of values.

$$326 \div 4 = 81.5$$

# Range

**Range** - Largest value (maximum) minus the smallest value (minimum)

Find the **range** {14, 17, 20, 13, 21, 16, 19}

Maximum: 21

Minimum: 13

**Range:**  $21 - 13 = 8$

# Practice

1) Find the **mean** and **range**:

$$\{14, 10, 15, 11, 20, 19, 16\}$$

**Mean:**  $(14+10+15+11+20+21+16) \div 7$

$$= 105 \div 7 = 15$$

**Range:** 10

2) Find the **mean** and **range**:

$$\{9, 14, 8, 17, 9, 7, 13, 10\}$$

**Mean:**  $(9+14+8+17+9+7+13+10) \div 8$

$$= 87 \div 8 = 10.875$$

**Range:** 9

# Practice

3) The **mean** of three numbers is **15**. Two of the numbers are **13** and **19**. What is the third number?

Work backwards: **Mean: 15** so...

$$15 \cdot 3 = 45$$

$$45 - (13 + 19)$$

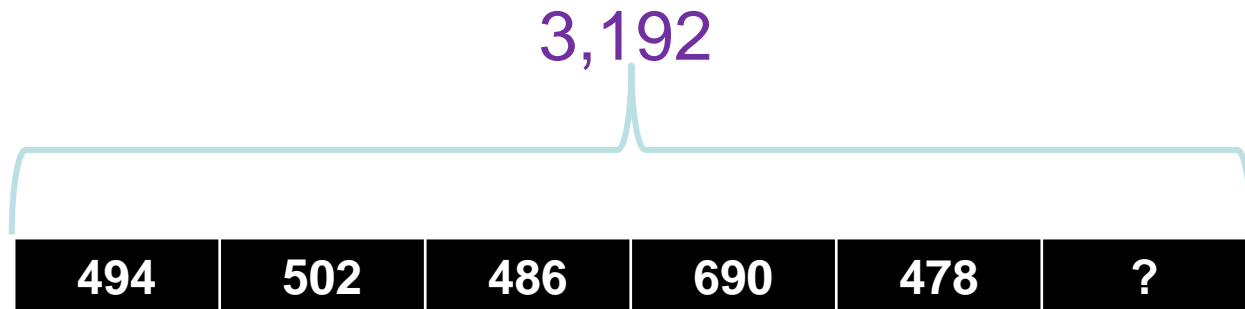
$$45 - 32$$

$$12$$

## Changes in the Mean

4) During the last 5 months, Bob spent 494, 502, 486, 690, and 478 minutes talking on the phone each month. Suppose the **mean for six months was 532 minutes**. How many minutes did Bob talk during the sixth month?

If the **mean is 532**, the sum of the six months is  $532 \times 6$ , or **3,192 minutes**



$$3,192 - (494 + 502 + 486 + 690 + 478)$$

Bob talked 542 minutes during the 6<sup>th</sup> month