Introduction to Measures of Central Tendency

Warm-Up

1

The number of pennies in each cup represents my scores for five math quizzes.

8   7   9   6   10

Your Task

Move the pennies among the cups so that each cup has the same number of pennies.

1.) How many pennies would be in each cup? _____

2.) If I score 14 points on the next quiz, how many pennies would be in each cup? _____

Mean

2

The number used to describe the center of a set of data is a **measure of central tendency**. The most common of these measures is the **mean**.

Mean   Key Concept

Words   The **mean** of a set of data is the sum of the data divided by the number of items in the data set. The mean is also referred to as *average*.

Examples   data set: 1 cm, 1 cm, 5 cm, 2 cm, 2 cm, 4 cm, 2 cm, 5 cm

mean: $\dfrac{1 + 1 + 5 + 2 + 2 + 4 + 2 + 5}{8}$ or 2.75 cm

Your Task

3.) I earned $14, $10, $12, $15, and $13 doing chores. What is the mean amount I earned from these chores?

4.) The length of several whales, in feet, are listed below.

46, 53, 33, 53, 79

If a 98-foot Blue Whale is added to this list, which of the following statements would be true?

A: The mean would decrease
B: The mean would increase
C: The mean would stay the same

Check Your Understanding. Click here.

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Median & Mode

Two other common measures of central tendency are **median** and **mode**.

Median — Key Concept

Words	In a data set that has been ordered from least to greatest, the **median** is the middle number if there is an odd number of data items. If there is an even number of data items, the median is the mean of the two numbers closest to the middle.
Example	data set: 7 yd, 11 yd, 15 yd, 17 yd, 20 yd, 20 yd
	median: $\frac{15 + 17}{2}$ or 16 yd — The median divides the data in half.

Mode

Words	The **mode** of a set of data is the number that occurs most often. If there are two or more numbers that occur most often, all of them are modes.
Example	data set: 50 mi, 45 mi, 45 mi, 52 mi, 49 mi, 56 mi, 56 mi
	modes: 45 mi and 56 mi

3

Your Task

The table below lists the bicycle sizes owned by the students in Mr. Slater's class.

Students' Bicycle Sizes (in.)

20	24	20	26
24	24	24	26
24	29	26	24

5.) What are the mean, median, and mode of the data?
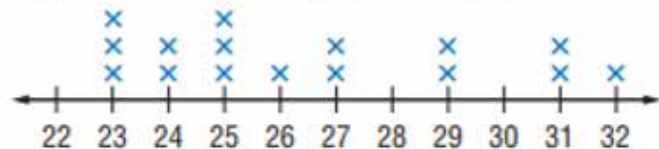
Additional Practice

Find the mean, median, and mode for each set of data. Round to the nearest tenth if necessary.

1. Miles traveled on the weekend: 29, 14, 80, 59, 78, 30, 59, 69, 55, 50

2.

Team	Number of Wins
Eagles	10
Hawks	8
Zipps	9
Falcons	11

3. **Minutes Spent Walking**

4. **MULTIPLE CHOICE** During the week, the daily low temperatures were 52°F, 45°F, 51°F, 45°F, and 48°F. If Saturday's low temperature of 51°F is added, which statement about the data set would be true?

   A The mean would decrease.

   B The median would decrease.

   C The mode would increase.

   D The mode would decrease.

Writing about Mathematics. Click Here

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