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Part 3: Math Skills

Statistics

Businesses constantly make decisions that involve various types of numerical data, such as prices, sales, order sizes, and various measurements. A math application which involves the collection, analysis and interpretation of data is called *statistics*. Some of most commonly used statistical measures are the *mean*, *median*, *mode*, and *range*.

The mean is also called the average, which is calculated with the following formula:

$$\frac{\text{sum of data entries}}{\text{number of data entries}} = \text{mean}$$

The median is the middle number in the data set after it is organized from smallest to largest. If there are an even number of data entries, add the two middle numbers and divide by 2. For example, if a data range consisted of the numbers 1, 2, 3, 4, 5, the median would be 3. If a data range consisted of the numbers 1, 2, 3, 4, 5, 6, the median would be 3 + 4 divided by 2, which equals 3.5.

The mode is the number in the data set that appears the most. If no number appears more than once, there is no mode.

The range is the difference between the largest and smallest number in the data set and is found using the following formula:

$$\text{largest data entry} - \text{smallest data entry} = \text{range}$$

Answer the following questions involving statistics.

- Jumpin' Jack is a manufacturer of backyard trampolines. The following are the sales and profit figures for each of the five years from 2011 to 2015.

2015

Sales: \$417,000

Profit: \$48,600

2014

Sales: \$355,000

Profit: \$37,900

2013

Sales: \$339,000

Profit: \$34,000

2012

Sales: \$312,000

Profit: \$29,600

2011

Sales: \$298,000

Profit: \$19,800

- Calculate the mean sales for Jumpin' Jack's last five years.

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- b. Calculate the mean profit for Jumpin' Jack's last five years.

2. Jumpin' Jack sells five different trampoline models at the following prices:

\$199, \$279, \$499, \$899, and \$1,299

- a. Calculate the mean price of the trampolines.

- b. What is the median price of the trampolines?

- c. What is the mode of the trampoline prices?

- d. Calculate the range of the trampoline prices.

3. Grand Party Supply operates a chain of party supply stores. The following are the number of piñatas that it has sold over the past seven months.

March: 526

April: 511

May: 599

June: 545

July: 577

August: 489

September: 647

What is the average number of piñatas sold over this period?
