

# Marketing Essentials



## Chapter 7

### basic math skills

#### Section 7.1 Math Fundamentals

#### Section 7.2 Interpreting Numbers

# Math Fundamentals



## Before You Read

**CONNECT** When do you use basic math skills in your everyday life?

## OBJECTIVES

- **Express** numbers with letters, using commas and hyphens.
- **Explain** fractions.
- **Perform** basic math operations with decimal numbers and round answers.
- **Convert** fractions to decimal equivalents.

## **THE MAIN IDEA**

Jobs in marketing and business require math skills.

## VOCABULARY

- digits
- fractions
- numerator
- denominator
- mixed number
- decimal number



# Math Fundamentals

## Graphic Organizer

### Examples of Math Operations

#### Math Operations

<b>Rounding from 3 Decimal Places to the Nearest 10<sup>th</sup></b>	<b>Converting a Fraction to a Decimal</b>	<b>Calculating Area of a Rectangular Room</b>

# Math Fundamentals

## Graphic Organizer

### Examples of Math Operations

#### Math Operations

<b>Rounding from 3 Decimal Places to the Nearest 10<sup>th</sup></b>	<b>Converting a Fraction to a Decimal</b>	<b>Calculating Area of a Rectangular Room</b>
$4.789 = 4.8$	$\frac{1}{8} = 0.125$	12 ft. long, 9 ft. wide = $12 \times 9 = 108$ sq. ft.
$774.123 = 774.1$	$\frac{2}{5} = 0.4$	20 ft. long, 18 ft. wide = $20 \times 18 = 360$ sq. ft.
$62.455 = 62.5$	$\frac{2}{3} = 0.667$	35 ft. long, 30 ft. wide = $35 \times 30 = 1,050$ sq. ft.

## Writing Whole Numbers



Our numbering system is composed of ten digits.



### **digits**

The ten basic symbols in our numbering system: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. Each digit represents a number and can be combined to represent larger numbers.



## Writing Whole Numbers

### Writing Numbers in Words

**36,750** → **thirty-six thousand, seven hundred fifty**

**360** → **three hundred sixty**

**29** → **twenty-nine**

**3,000,375** → **three million, three hundred seventy-five**

## Writing Whole Numbers

**Many jobs in marketing require a good understanding of fractions.**

**fraction**

Number used to describe or compare parts of a whole.

## Writing Whole Numbers

The numerator and denominator are important fraction concepts.

$$\frac{3}{5}$$



### **numerator**

The top number of a fraction, which represents the number of parts being considered.



### **denominator**

The bottom number of a fraction, which represents how many parts in a whole.

## Writing Whole Numbers

When the numerator is greater than the denominator, it can be written as a mixed number.

$$1\frac{1}{5}$$



### **mixed number**

A whole number and a fraction.

## Decimal Numbers

A decimal number is another way to write a fraction.

**5.3**



### **decimal number**

Another way to write a fraction or mixed number whose denominator is a power of 10.



## Decimal Numbers

**June Jones**

123 West St.

Silver Springs, CO 63312

47/1600

**0500**

Date

Decimal form

Pay to the  
order of:**XYZ Company**

\$

**324.57****Three hundred twenty-four and 57/100 Dollars****BANK ONE**

Silver Springs, CO 63312

Dollars written in words

Cents written as a fraction

Memo

*June Jones*

•:055121000: 00123456700:•

**0500**

## Operations with Decimal Numbers

### **Multiplying decimal numbers:**

- 1. Multiply the two numbers like whole numbers.**
- 2. Add the number of decimal places in the numbers being multiplied.**

## Operations with Decimal Numbers

Graphic  
Organizer

The Steps of Rounding  
Decimal Numbers

**Rounding Decimal  
Numbers**

```
graph LR; A[Rounding Decimal Numbers] --- B[ ]; A --- C[ ]; A --- D[ ]
```

## Operations with Decimal Numbers

Graphic  
Organizer

The Steps of Rounding  
Decimal Numbers

**Rounding Decimal  
Numbers**

1. Find the decimal place  
you are rounding to.

2. Look at the digit to the  
right of that place.

3. If the digit to the right  
is less than 5, leave the  
first digit as is. If the digit  
is 5 or greater, round up.

## Operations with Decimal Numbers

**Division of decimal numbers is similar to division of whole numbers.**



## Operations with Decimal Numbers

**To convert any fraction to a decimal, simply divide the numerator by the denominator.**

## Operations with Decimal Numbers

Graphic  
Organizer

Converting Fractions to Decimals



## Calculating Surface Measurements

**To compute the area of a rectangle or square, multiply the length of one side by the length of the side next to it.**

# Math Fundamentals



## After You Read

## Section 7.1

1. **Write** the whole number 3,010,049 in words, using commas and hyphens correctly.

Three million, ten thousand, forty-nine

# Math Fundamentals



## After You Read

## Section 7.1

2. Round \$6.875 to the nearest cent and to the nearest dollar.

Rounded to the nearest cent: \$6.88; to the nearest dollar: \$7.00



# Math Fundamentals



## After You Read

## Section 7.1

3. **Convert** the fraction  $\frac{1}{8}$  to its decimal equivalent.

0.125 ( $1 \div 8 = 0.125$ )

# Interpreting Numbers



## Before You Read

**CONNECT** When have you had to represent a math concept visually?

# Interpreting Numbers

## OBJECTIVES

- **Use** a calculator to solve math problems.
- **Convert** percentages to decimals and decimals to percentages.
- **Read** graphs used to present mathematical data.

## **THE MAIN IDEA**

Calculators, computers, algebraic thinking, and statistics are all important tools for marketing professionals.

## VOCABULARY

- RPN
- percentage
- bar graph
- line graph
- circle graph
- pie chart

# Interpreting Numbers

## Graphic Organizer

Tax on a Sale, Estimating Gratuity, and  
Illustrating or Comparing Data

### Calculation Examples

Calculating Tax on a Sale	Estimating for a Gratuity	A Simple Chart or Graph to Illustrate and Compare Data

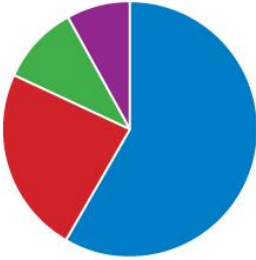


# Interpreting Numbers

## Graphic Organizer

### Tax on a Sale, Estimating Gratuity, and Illustrating or Comparing Data

#### Calculation Examples

Calculating Tax on a Sale	Estimating for a Gratuity	A Simple Chart or Graph to Illustrate and Compare Data
New car price: \$15,995. Sales tax: 6.5%. Calculation: $\$15,995 \times 0.065 = \$1,039.68$	Cost of dinner: \$57.72. Gratuity: 15%. Calculation: Round \$57.72 to \$60; $\$60 \times 0.15 = \$9.00$ .	<p><b>Sales</b></p>  <ul style="list-style-type: none"><li>1st Qtr</li><li>2nd Qtr</li><li>3rd Qtr</li><li>4th Qtr</li></ul>

## Using a Calculator

**Most calculators use algebraic logic to enter numbers.**

**The other type uses RPN.**



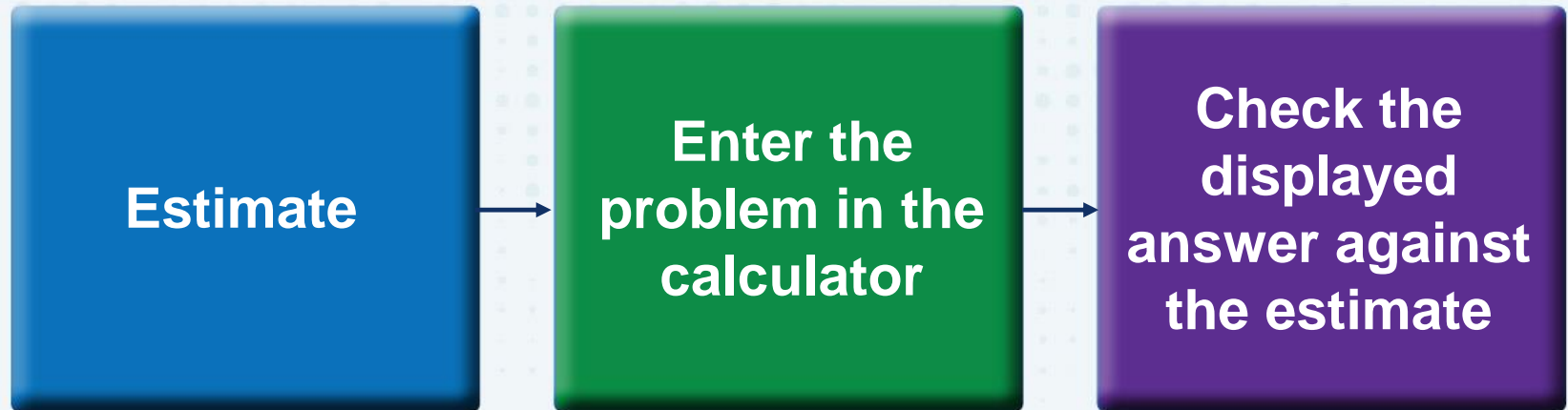
### **RPN**

An entry method in which the operators follow the operands.

# Interpreting Numbers

## Using a Calculator

### Estimate, Then Operate



# Interpreting Numbers

## Using a Calculator

Graphic  
Organizer

Compare and Contrast Calculators

Algebraic Logic	RPN

# Interpreting Numbers

## Using a Calculator

### Graphic Organizer

#### Compare and Contrast Calculators

Algebraic Logic	RPN
When using calculators that use algebraic logic, you enter the numbers and operators in the order they appear in the problem. For example: $225 \div 25 \times 4 =$ (in that order)	When using calculators that use RPN, the amounts are entered first and the operators are entered last. For example: $225 \div 25$ , would be entered 225 25 $\div$

# Interpreting Numbers

## Ten-Key by Sight or Touch

### Tips for Using a 10-Key Keypad

**Keep your fingers close to the home row of keys ( 4,5,6).**

**Keep your arm, wrist, and hand in a straight line.**

**Do not rest your wrist on your desk or the counter.**

**Relax your fingers and press the keys lightly.**

**Frequent, short periods of practice are effective.**



# Interpreting Numbers

## Percentages

To write a whole number or a decimal number as a percentage, multiply it by 100.

Move the decimal point two places to the right.



### **percentage**

A number expressed as parts per 100.

# Interpreting Numbers

## Percentages

**To write a fraction or mixed number as a percentage, first convert the fraction to decimal form. Then multiply by 100.**

# Interpreting Numbers

## Percentages

### Graphic Organizer

#### Converting Fractions and Percentages

#### Converting Fractions and Percentages

Fraction	Percentage	Decimal
$\frac{1}{2}$		
	62.5%	
$\frac{5}{7}$		
		0.83
	25%	
		3.375
$\frac{1}{5}$		
$\frac{7}{1000}$		
	27.5%	
		0.15

# Interpreting Numbers

## Percentages

### Graphic Organizer

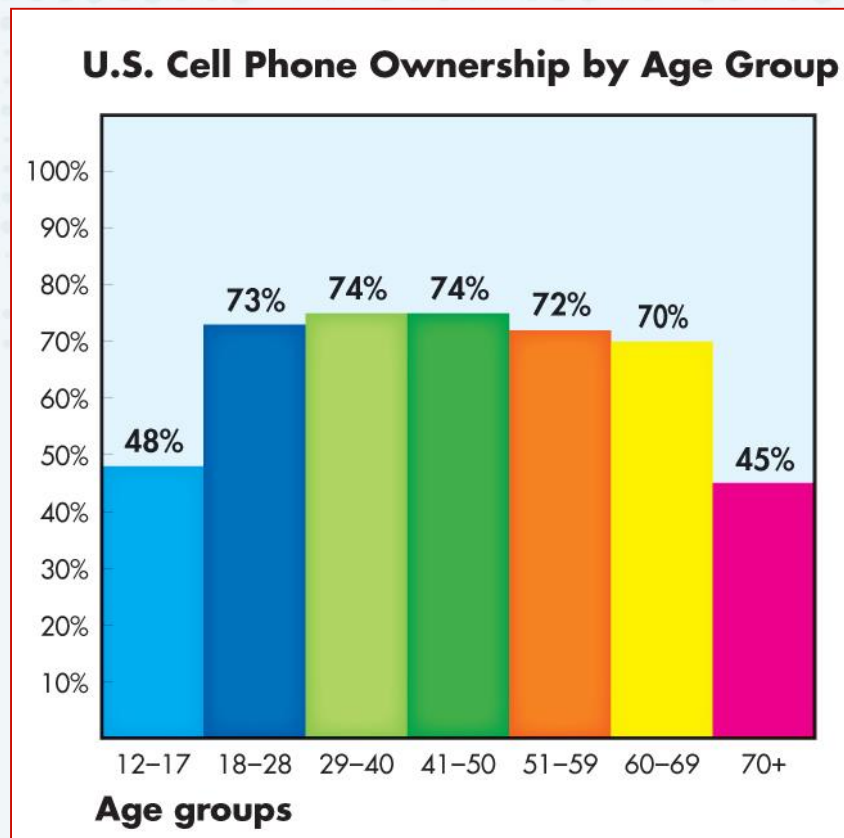
#### Converting Fractions and Percentages

#### Converting Fractions and Percentages

Fraction	Percentage	Decimal
$\frac{1}{2}$	50%	0.50
$\frac{5}{8}$	62.5%	0.625
$\frac{5}{7}$	71%	0.71
$\frac{83}{100}$	83%	0.83
$\frac{1}{4}$	25%	0.25
$3\frac{3}{8}$	337.5%	3.375
$\frac{1}{5}$	20%	0.2
$\frac{7}{1000}$	.7%	0.007
$\frac{11}{40}$	27.5%	0.275
$\frac{3}{20}$	15%	0.15

## Reading Charts and Graphs

### Example of a Bar Graph

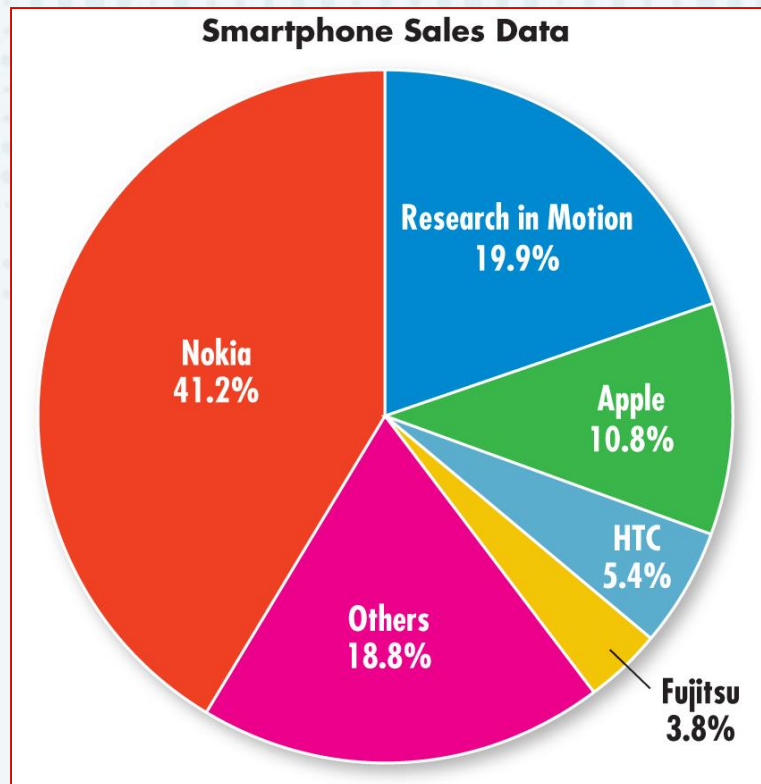


#### **bar graph**

A drawing made up of parallel bars whose lengths correspond to what is being measured.

## Reading Charts and Graphs

### Example of a Circle Graph or Pie Chart



#### **circle graph**

A pie-shaped figure that shows the relative sizes of the parts of a whole.



#### **pie chart**

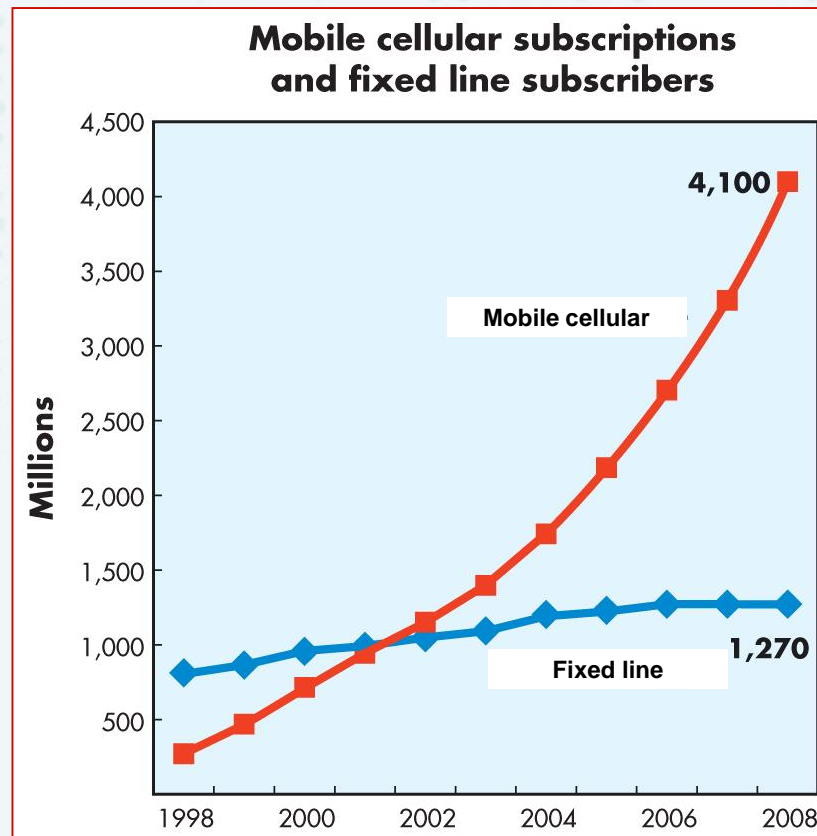
Another name for a pie chart.



# Interpreting Numbers

## Reading Charts and Graphs

### Example of a Frequency Table



## Algebraic Thinking

**Algebraic thinking looks for patterns and relationships called *functions*.**

**We use symbols to represent variables.**

## Descriptive Statistics

**The mean is computed by adding up all the values and dividing by the number of values.**

**The median is the exact middle of a set of values.**

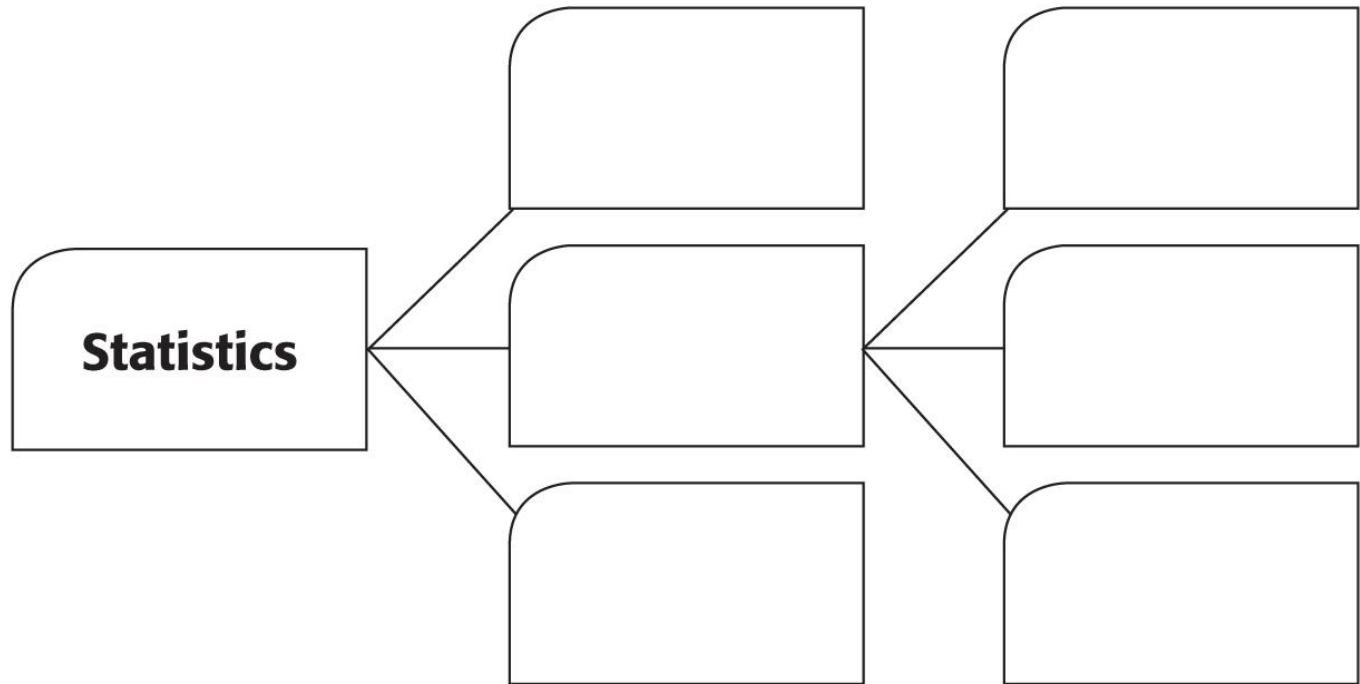
**The mode is the most frequent occurring value.**

# Interpreting Numbers

## Descriptive Statistics

Graphic  
Organizer

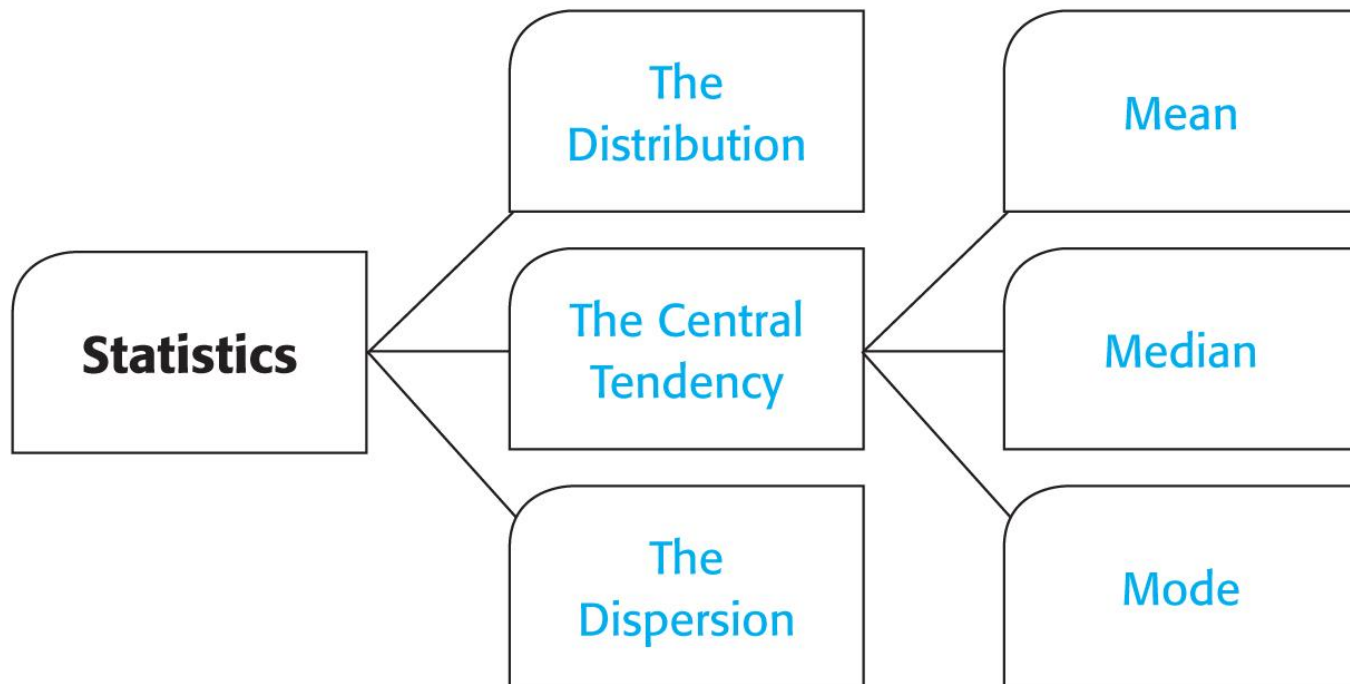
Statistics Terms



## Descriptive Statistics

Graphic  
Organizer

### Statistics Terms



# Interpreting Numbers



## After You Read

## Section 7.2

1. **Calculate** the decimal equivalent of  $\frac{2}{3}$ . Round to the nearest thousandth.

The decimal equivalent of  $\frac{2}{3}$ , rounded to the nearest thousandth, is 0.667.



# Interpreting Numbers



## After You Read

## Section 7.2

2. **Determine** the decimal equivalent of 25 percent. What is the percentage equivalent of 1?

The decimal equivalent of 25% is .25; the percentage equivalent of 1 is 100%.

# Interpreting Numbers



## After You Read

## Section 7.2

3. **Explain** how graphs are helpful in representing numerical data. What are three common forms of graphic representation?

Graphs present information in a way that is easy to understand.

Three common forms of graphic representation are bar graphs, line graphs, and circle graphs.

# Marketing Essentials



## End of Chapter 7

### basic math skills

#### Section 7.1 Math Fundamentals

#### Section 7.2 Interpreting Numbers