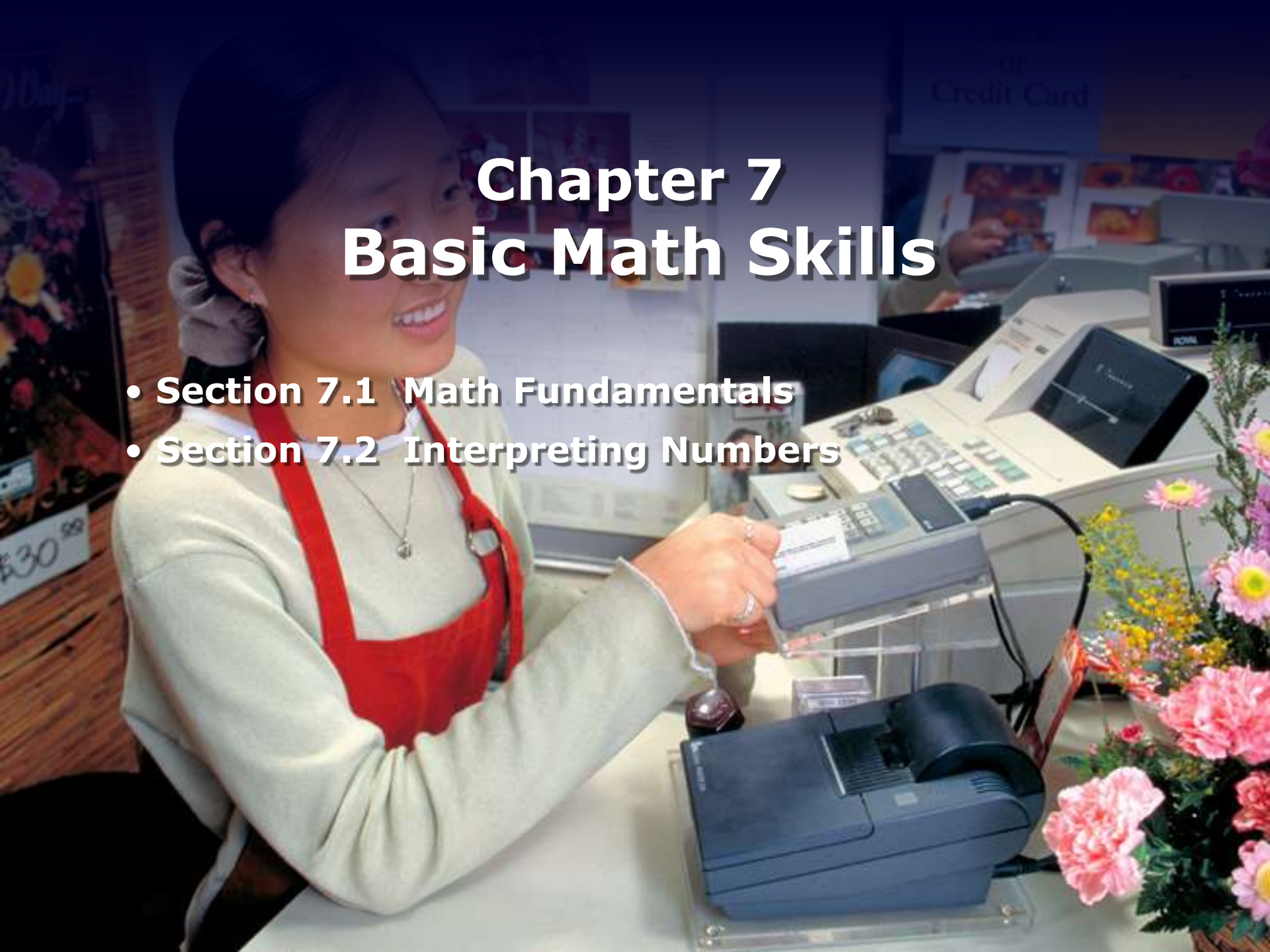




Unit 4

Skills for Marketing

- Chapter 7** Basic Math Skills
- Chapter 8** Communication Skills
- Chapter 9** Technology Applications for Marketing
- Chapter 10** Interpersonal Skills
- Chapter 11** Management Skills

A photograph of a young woman with dark hair, smiling, wearing a white long-sleeved shirt and a red apron. She is standing behind a counter in what appears to be a flower shop, operating a cash register. The register has a receipt printer and a card reader. To the right, there are several bouquets of pink and yellow flowers. In the background, there are signs for 'Credit Card' and '30'.

- **Section 7.1 Math Fundamentals**
- **Section 7.2 Interpreting Numbers**

Math Fundamentals

Key Terms

digit

fractions

numerator

denominator

mixed number

decimal
number

Objectives

- Write numbers in words, using commas and hyphens correctly
- Understand fractions
- Perform basic math operations with decimal numbers and round answers
- Convert fractions to decimal equivalents

Math Fundamentals

Graphic Organizer

Write down examples of rounding from three decimal places to the nearest tenth, converting a fraction to a decimal, and calculating the area of a rectangular room.

Rounding from Three Decimal Places to the Nearest Tenth	Converting a Fraction to a Decimal	Calculating the Area of a Rectangular Room
4.888 = 4.9		

Writing Whole Numbers

digit



The ten basic symbols that compose the numbering system: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.

When taking inventory, count using whole numbers.

A **digit** represents a number. Digits can be combined to represent larger numbers. These numbers are whole numbers because they can be written without fractions or decimals.

Writing Whole Numbers

Writing whole numbers in words requires five steps:

1. Separate the number into groups of three digits: units, thousands, and millions, etc.
2. Separate the groups with commas in sets of three.

Writing Whole Numbers

3. When writing the names of whole numbers, never use the word *and*.
4. Use hyphens in numbers less than 100 that are written as two words. (Ex. Twenty-nine)
5. When a three-digit group is made up of only zeros, do not write the name of the group.

Fractions

fractions



Numbers used to describe or compare parts of a whole.

numerator



The top number in a fraction; it represents the number of parts being considered.

denominator



The bottom number in a fraction; it represents how many parts make up a whole.

Fractions ◀ are numbers used to describe or compare parts of a whole.

The top number, the **numerator** ◀, represents the number of parts being considered.

The bottom number, the **denominator** ◀, represents how many parts in a whole.

Fractions

mixed number

A whole number and a fraction written together.

When the numerator is greater than the denominator, the fraction describes a number greater than 1. It can be written as a **mixed number** \leftarrow , which is a whole number and a fraction together.

$$\frac{6}{5} = 1\frac{1}{5}$$

Mixed number

Numerator is greater than denominator.

Decimal Numbers

decimal number



A fraction or mixed number whose denominator is a power of ten.

A **decimal number** ◀ is another way to write a fraction or mixed number whose denominator is a power of ten. (10, 100, 1000, etc.)

Decimal Numbers

Understanding the relationships between decimal numbers and fractions is important when you are writing a check.

June Jones 123 West St. Silver Springs, CO 63312	47/1600 Date _____	0500
<i>Pay to the order of:</i> XYZ Company	\$ 324.57	
Three hundred twenty-four and 57/100 Dollars		
BANK ONE Silver Springs, CO 63312		
Memo _____	<i>June Jones</i>	
•:055121000: 00123456700:•		0500

Adding and Subtracting Decimal Numbers

To add or subtract decimal numbers, first list the numbers vertically, keeping the decimal points in line with each other. Then add or subtract as you would with whole numbers.

Multiplying Decimal Numbers

To multiply decimal numbers, use the following two-step process:

1. Multiply the two numbers as whole numbers.
2. Add the number of decimal places and count off the same number in the product and insert the decimal point.

Multiplying Decimal Numbers

$$9.6 \times 4.25 = ?$$

4.25

← 4.25 has two decimal places.

× 9.6

← 9.6 has one decimal place.

2550

3825

40.800

↑
Place the decimal three places to the left.

Rounding Decimal Numbers

Use the following steps to round decimal numbers:

1. Find the decimal place you are rounding to.
2. Look at the digit to the right of that decimal place.
3. If the digit to the right is less than five, leave the first digit as is. If the digit is five or greater, round up.

Dividing Decimal Numbers

Follow these steps to divide decimal numbers:

1. Shift the decimal point in the divisor (the number you are dividing by) so that it becomes a whole number.
2. Shift the decimal point in the dividend (the number to be divided) the same number of places.

Dividing Decimal Numbers

3. Place a decimal point in the answer space directly above its new position in the dividend. Then divide as with whole numbers.

Some decimal answers will continue infinitely as you write zeros to the right of the decimal point.

Converting Fractions to Decimals

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



Calculating Surface Measurements

The area of a surface is the number of squares of a certain measure that the surface covers. To compute the area of a rectangle or square, multiply the length of one side by the length of the side next to it.

The shorter side is usually called the width while the longer side is the length.

Calculating Surface Measurements

$$A = l \times w$$

A stands for area, l for length, and w for width.

The formula for the area of a square is really the same, but since there is no difference in length and width, it may be written $A = s^2$ where A stands for area and s for side.

The slide features a red top border with a blue and yellow wavy pattern. A red banner at the top center contains the text "SECTION 7.1 REVIEW" in white. Below the banner is a large green chalkboard area with a red border. The chalkboard is decorated with yellow spiral patterns at the top, bottom, left, and right corners. The bottom of the slide has a white wavy border.

SECTION 7.1 REVIEW

SECTION 7.1 REVIEW

- click twice to continue -

Interpreting Numbers

Key Terms

percentage

bar graph

line graph

circle graph

pie chart

Objectives

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

Interpreting Numbers

Graphic Organizer

Write in your own example of calculating tax on a sale, estimating for a gratuity, and a simple chart or graph to illustrate and compare data.

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

Using a Calculator

Calculators simplify the computation that is common in both the business world and in people's personal lives. Calculators come in two basic types:

- Algebraic entry
- Reverse entry

Estimate, Then Operate

It is important to estimate your answers when you use a calculator because you may make errors when entering numbers or even press the wrong operation key. Check the displayed answer against your estimate.

How to Make Entries

Keep in mind as you enter digits that you can disregard leading zeros to the left of the decimal point (as in 0.6). All fractions must be converted to decimals by dividing the numerator by the denominator.

How to Make Entries

You can perform a string of involved calculations on more than two entries. Not all calculators work the same way if you switch between addition/subtraction and multiplication/division. Most calculators do the operations in the order they are entered.

Ten-Key by Sight or Touch

Most computer keyboards have a ten-key keypad along the right side of the board. With practice, you can learn to operate a ten-key keypad by touch. This skill is valuable for, online point-of-sale entries, accounting, using spreadsheet programs, and other computer-related applications.

Percentages

percentage

A number expressed in parts per 100.

Percentage ◀ means parts per 100. Thus, a number expressed as a percentage represents the number of parts per 100.

To write a whole number or a decimal as a percentage, multiply it by 100 (move the decimal two places to the right).

Converting Fractions to Percentages

To convert a fraction to a percentage, divide the numerator by the denominator (if there is a whole number, add it to the converted fraction) and multiply your answer by 100.

Converting Percentages to Decimals

You can change a percentage to a decimal by dividing by 100, or just move the decimal point two places to the left.

Converting Percentages to Decimals

To solve percentage problems:

1. Estimate the answer
2. Translate the problem into a math statement
3. Do the calculations
4. Round money amounts to nearest cent
5. Check your answer

Reading Charts and Graphs


Usually a graph shows the relationship between two kinds of data, or statistical information. Graphs can describe things like:

- Market trends
- Profits
- Expenses

Bar Graphs

bar graph

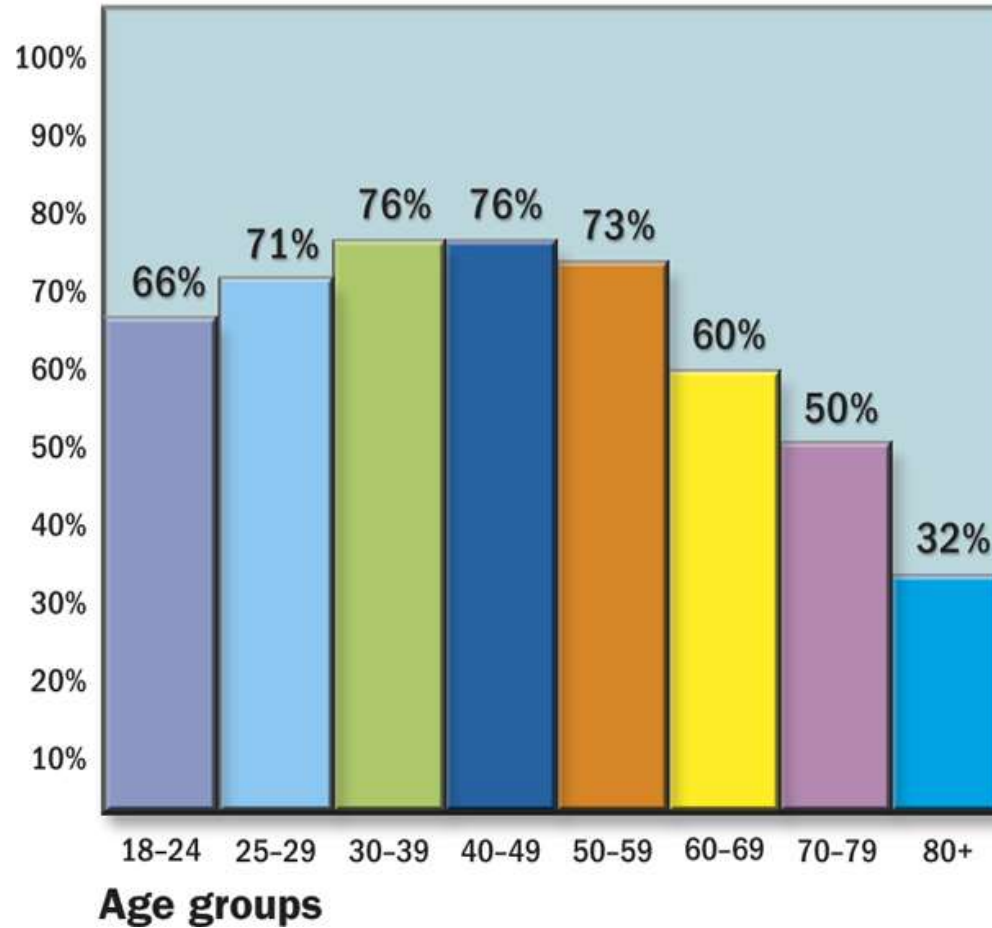
A drawing made up of parallel bars whose lengths are proportional to the qualities being measured.

A **bar graph**  is a drawing made up of parallel bars whose lengths are proportional to the qualities being measured.

In the following graph, draw an imaginary line across the top of the bar that represents 18 to 24-years olds. Note where that line intersects the left side of the graph: 66%.

Bar Graphs


U.S. Cell Phone Ownership by Age Group



Line Graphs

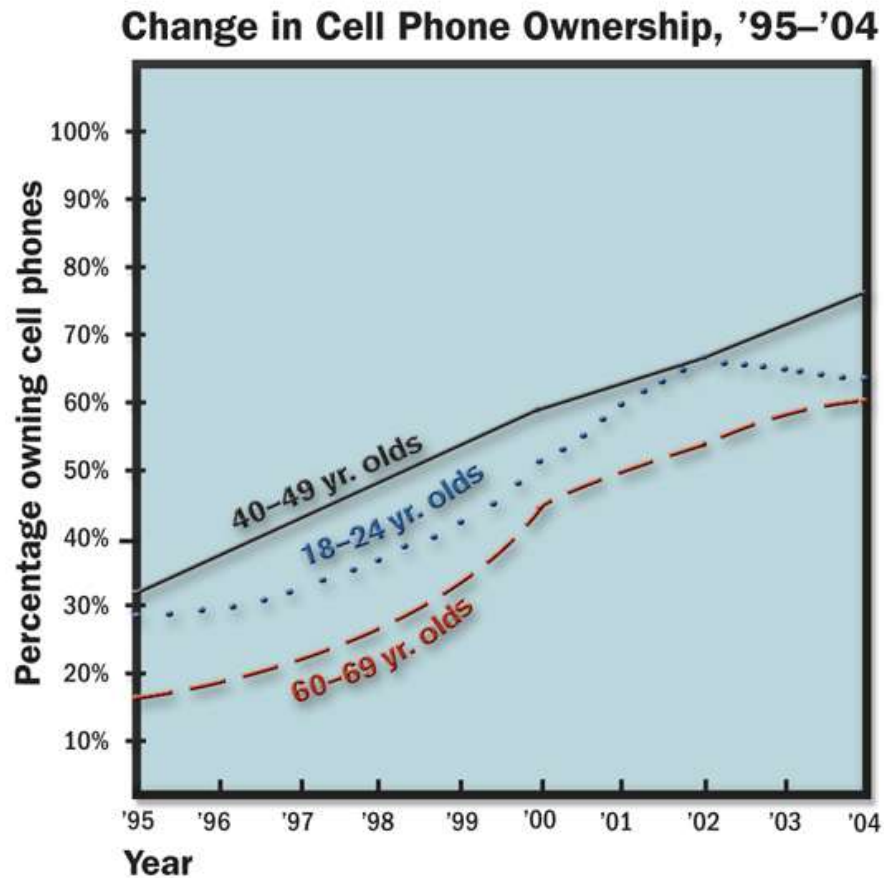
line graph

A graph using a line that joins points representing changes in a variable quantity, usually over a period of time.

A **line graph**  uses a line that joins points representing changes in a variable quantity, usually over a specific period of time. It is useful for charting:

- Sales and prices
- Profits and output

Line Graphs



This information is useful in predicting future trends.

Circle Graphs

circle graph

A pie-shaped geometric representation of the relative sizes of the parts of a whole; also called a pie chart.

A **circle graph** ◀ is a geometric representation of the relative sizes of the parts of a whole. Business often choose such a graph to compare things like:

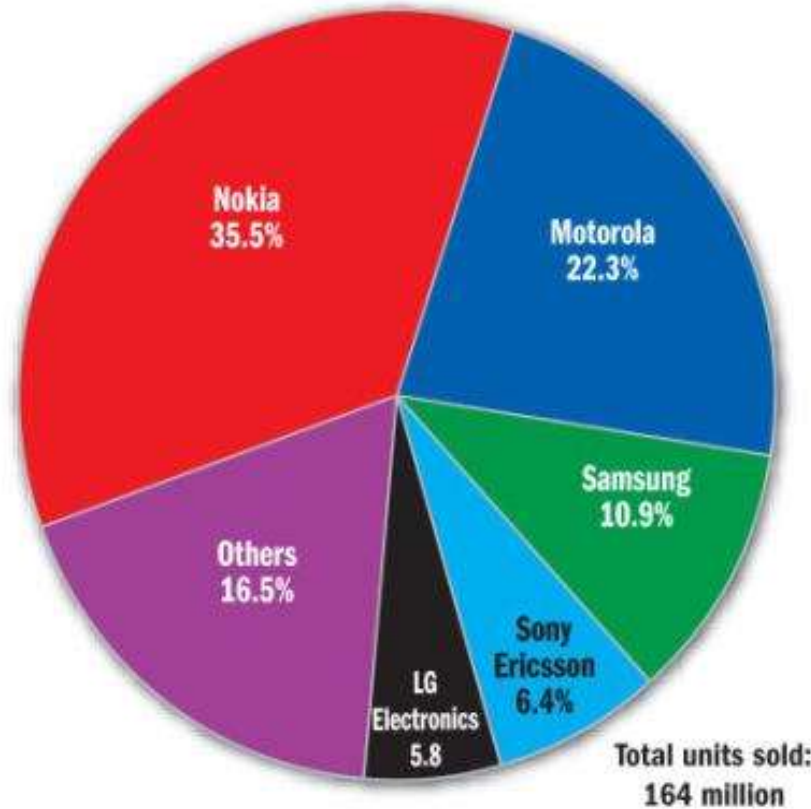
- The costs of different aspects of manufacturing
- Expenditures of a specific department

Circle Graphs

pie chart



A pie-shaped geometric representation of the relative sizes of the parts of a whole; also called a circle graph.



Source: cellular-news.com

A circle graph is better known as a **pie chart** because it looks like a pie cut into slices of different sizes.

Frequency Tables

A frequency table lists numbers, fractions, or percentages observed for different intervals. Frequency tables can reveal information such as consumer buying behavior.

Customers by Region

Region	Percentage of Customers
Midwest	31%
Northeast	34%
South	20%
West	15%

Algebraic Thinking

Using algebraic thinking, we look for patterns and relationships, which are called functions in mathematics. Symbols can also represent variables, which are numbers we are not sure of or those that will change.

Descriptive Statistics

Statistics are used to describe and summarize data, thus making the data more meaningful and easier to understand.

The central tendency of a distribution is an estimate of the center of a distribution of values.

Descriptive Statistics

The three main types of estimates of central tendency are:

- Mean - the average, computed by adding all the values and dividing by the number of values
- Median - the exact middle of a set of values
- Mode - the most frequently occurring value

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SECTION 7.2 REVIEW

SECTION 7.2 REVIEW

- click twice to continue -

FOCUS on KEY POINTS

Section 7.1

- The placement name for each digit and for groups of digits is necessary for reading numbers, writing numbers, and for writing a check. A fraction is a number used to describe a part of a whole amount.

FOCUS on KEY POINTS

Section 7.1

- A decimal number is a fraction or mixed number whose denominator is a power of 10. Rounding decimal numbers is common when multiplying with amounts of money, as when figuring tax, discounts, and gratuities.

FOCUS on KEY POINTS

Section 7.2

- Nearly everyone in marketing uses a calculator, and there are two basic types: the algebraic system and the reverse-entry system.
- Charts and graphs present data that is easier to understand than a long series of numbers.



This chapter has helped prepare you to meet the following DECA performance indicators:

- Summarize and disclose tips.
- Maintain daily financial transactions.
- Forecast sales.
- Prepare simple written reports.



CHAPTER 7 REVIEW

CHAPTER 7 REVIEW

- click twice to continue -