

## Section 2.2 Bar Graphs, Circle Graphs, and Time-Series

### Graphs

#### Objective:

In this section you learned how to determine types of graphs appropriate for specific data, how to construct bar graphs, Pareto charts, circle graphs, and time-series graphs, and how to interpret information displayed in graphs.

Course Number
Instructor
Date

<p><b>Important Vocabulary</b></p> <p>Define each term or concept.</p> <p>Bar graph</p> <p>Clustered bar graph</p> <p>Pareto chart</p> <p>Circle graph (pie chart)</p> <p>Time series graph</p> <p>Time series data</p>
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For each of the following statements, determine whether the statement is true or false.

- (a) In a bar graph, the bars do not have to be of uniform width.
- (b) The bars in a bar graph can be vertical or horizontal.
- (c) The lengths of the bars in a bar graph stands for certain values of the variable being displayed.
- (d) When two or more variables are displayed together, the bar graph is called a clustered bar graph.
- (e) In a Pareto chart, the bars are arranged from left to right according to increasing height.
- (f) A circle graph is also called a pie chart.
- (g) Circle graphs are usually used to display percentages.

**Focus Points**

how to determine types of graphs appropriate for specific data, how to construct bar graphs, Pareto charts, circle graphs, and time-series graphs, and how to interpret information displayed in graphs.

- (h) A time series data contains the values of a variable taken at regular intervals over a certain time period.
- (i) A time series graph displays data in the corresponding time series data.

**Example 1.** Below is the data (in hundreds) showing the enrollment of male students and female students in a college in the years of 1995, 2000, and 2005. Make a clustered bar graph for this data.

Year	1995	2000	2005
Male	30	34	32
Female	28	35	33

**Example 2.** Use the data given in Example 1, make a Pareto chart for male student enrollment in those three years.

**Example 3.** Use the data given in Example 1, make a circle graph to display the distribution between male and female students in 1995's enrollment.

(a) Fill in the missing parts in the table below. Remember that the central angle of a circle is  $360^\circ$ . Round to the nearest degree.

Students	Number (in hundreds)	Fractional Part	Percentage	Degrees
Male	30	$\frac{30}{58}$	_____	_____
Female	28	_____	_____	_____
Total	58	_____	_____	_____

(b) Make the circle graph.

**Example 4.** Use the data given in Example 1, make a time-series graph for the female student enrollment in those three years.