

Lesson 10-5

Problem

URBAN PLANNING A city planner is looking at the results of a survey of housing types. She decides to make a circle graph of the data to present to the next city council meeting.

Housing Type	Number
Single-family home	8020
Two-family home	2982
Three-to-six family home	521
Seven or more units buildings	1895

Solution

Step 1: Add all of the data to find the total.

$$8020 + 2982 + 521 + 1895 = 13,418$$

Step 2: Find what percent each number is of the total. Use a calculator and round percents to the nearest whole percent.

Housing Type	Number	Percent of total
Single-family home	8020	60%
Two-family home	2982	22%
Three-to-six family home	521	4%
Seven or more units buildings	1895	14%

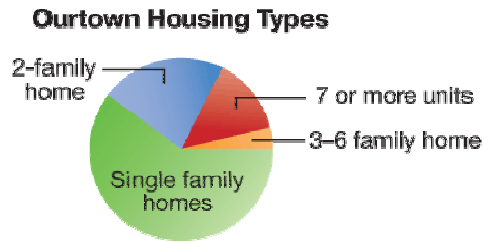
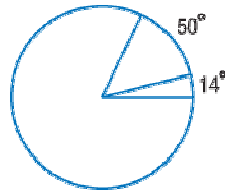
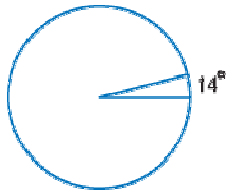
Step 3: Find the central angles that correspond to each percent.

Since there are 360° in a circle, use the percents found in Step 2 to find corresponding central angle measures. For example, 60% of 360 is 216° .

Housing Type	Percent of total	Central angle
Single-family home	60%	216°
Two-family home	22%	79°
Three-to-six family home	4%	14°
Seven or more units buildings	14%	50°

Step 4: Construct a graph using a compass, straightedge, and protractor.

Start with the smallest angles and work around to the largest angle. Draw a circle and one radius. Place the protractor so that the 14° mark aligns with the radius. Make a mark at 14° and draw a radius at that point.



Place the protractor along the new radius. Make a mark at 50° and draw a radius at that point. Continue in this way around the circle. Label each sector and write a title for the graph.