

Making Circle Graphs

A **circle graph** is a graph that shows the relationship between parts of the data and the whole. The circle represents the total data. Individual data are represented by parts of the circle. The examples show how to construct a circle graph.

Example 1 The table shows the percent of her income that Ms. Garcia spends in each category. Make a circle graph to represent the data.

How Ms. Garcia Spends Her Money	
Category	Amount Spent
Savings	10%
Car Payment/Insurance	20%
Food	20%
Clothing	10%
Rent	30%
Other	10%

Step 1 Find the number of degrees for each category. Since there are 360° in a circle, multiply each percent by 360 to find the number of degrees for each section of the graph.

Savings, Clothing, Other

$$10\% \text{ of } 360^\circ = 0.1 \cdot 360^\circ = 36^\circ$$

The sections for Savings, Clothing, and Other are each 36° .

Car Payment, Food

$$20\% \text{ of } 360^\circ = 0.2 \cdot 360^\circ = 72^\circ$$

The sections for Car Payment and Food are each 72° .

Rent

$$30\% \text{ of } 360^\circ = 0.3 \cdot 360^\circ = 108^\circ$$

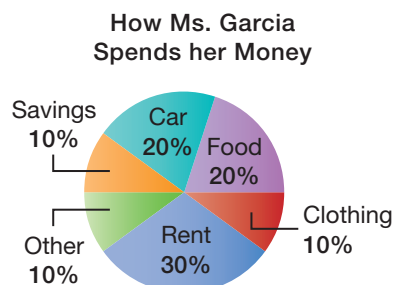
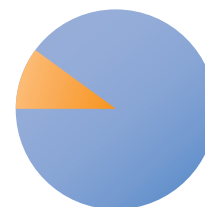
The section for Rent is 108° .

Step 2 Use a compass to draw a circle. Then draw a radius.

Step 3 Use a protractor to draw a 36° angle to make the section representing Savings. (You can start with any angle.)

Step 4 Repeat for the remaining sections.

Step 5 Label each section of the graph with the category and percent. Give the graph a title.



Example 2

The table shows how Jessie uses her time on a typical Saturday. Make a circle graph of the data.

First find the ratio that compares each number of hours to the total number of hours in a day, 24.

Activity	Hours
Jogging	1
Reading	2
Sleeping	9
Eating	2
Talking on the Phone	1
Time with Friends and Family	4
Studying	5

$$\text{Jogging: } \frac{1}{24}$$

$$\text{Reading: } \frac{2}{24}$$

$$\text{Sleeping: } \frac{9}{24}$$

$$\text{Eating: } \frac{2}{24}$$

$$\text{Phone: } \frac{1}{24}$$

$$\text{Friends: } \frac{4}{24}$$

$$\text{Studying: } \frac{5}{24}$$

Then multiply each ratio by 360 to find the number of degrees for each section of the graph.

$$\text{Jogging, Phone: } \frac{1}{24} \cdot 360^\circ = 15^\circ$$

$$\text{Reading, Eating: } \frac{2}{24} \cdot 360^\circ = 30^\circ$$

$$\text{Sleeping: } \frac{9}{24} \cdot 360^\circ = 135^\circ$$

$$\text{Friends: } \frac{4}{24} \cdot 360^\circ = 60^\circ$$

$$\text{Studying: } \frac{5}{24} \cdot 360^\circ = 75^\circ$$

Make the circle graph.

