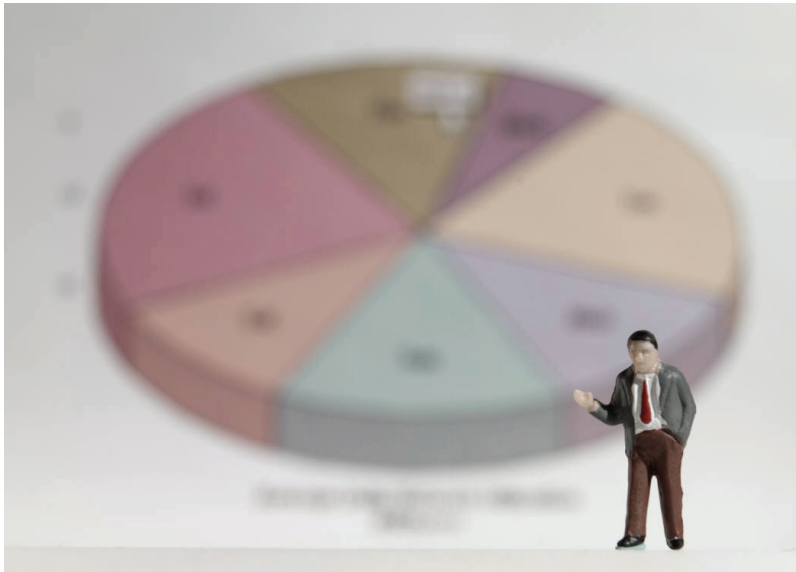


5.8a Circle Graphs



Objectives

To read circle graphs

To make circle graphs

Vocabulary

circle graph - A graph that displays portions of data collections as parts of a circular region. The parts are often labeled using fractions or percents.

5.8b Circle Graphs

radius of a circle - A segment that has the center as one endpoint and a point on the circle as the other endpoint.



Problem of the Day

If you have a whole pie for yourself and three other friends, and you divide it equally, what fraction and what percentage of the pie will you each get?

What if one friend is so hungry that she wants 50% for herself. How much would everyone else get?



Answer:

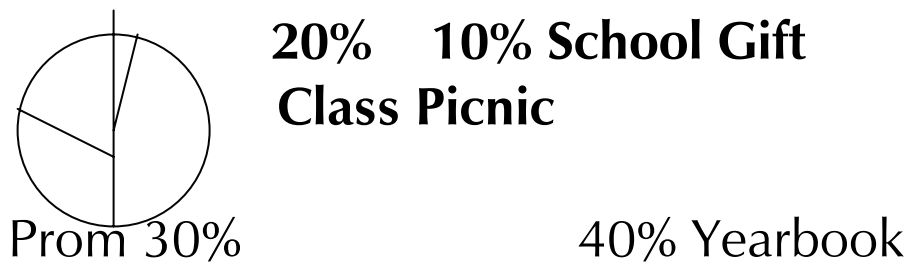
$$\frac{1}{4} = 25\%; \frac{1}{6}$$

5.8c Circle Graphs

Review:

The sum of the measures of the central angles in a circle is 360° .

Teaching Example 1:



The circle graph shows how a senior class spent \$4,000. How much was spent for each event?

Solution

The sum of the percents in a circle is 100%.

$$30\% + 20\% + 40\% + 10\% = 100\%$$

$$\text{School Gift} = 10\%$$

$$\text{Yearbook} = 40\%$$

$$\text{Prom} = 30\%$$

$$\text{Class Picnic} = 20\%$$

5.8d Circle Graphs

Remember:

$30\% = 0.30$; $20\% = 0.20$; $40\% = 0.40$; $10\% = 0.10$

Prom	Class Picnic	Yearbook	School Gift
\$4,000	\$4,000	\$4,000	\$4,000
<u>$\times 0.30$</u>	<u>$\times 0.20$</u>	<u>$\times 0.40$</u>	<u>$\times 0.10$</u>
\$1,200	\$800	\$1,600	\$400

So, \$1,200 was spent on the prom, \$800 was spent on the class picnic, \$1,600 on the yearbook and \$400 on the school gift.

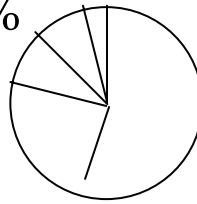


5.8e Circle Graphs

Teaching Example 2:

One year, a family spent \$1,500 on the use of energy. How much was spent for each use?

$$10\% + 10\% + 5\% + 15.2\% + 59.8\% = 100\%$$



Cooking = 10%

Cooling = 5%

Other = 10%

Heating = 59.8%

Hot Water = 15.2%

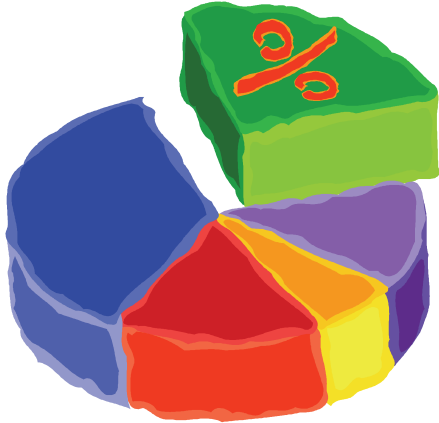
$$5\% = 0.05; 10\% = 0.10;$$

$$59.8\% = 0.598; 15.2\% = 0.152$$

Cooling	Cooking	Other	Heating	Hot Water
\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
<u>x0.05</u>	<u>x0.10</u>	<u>x0.10</u>	<u>x0.598</u>	<u>x0.152</u>
\$75.00	\$150.00	\$150.00	\$897.00	\$228.00

5.8f Circle Graphs

So, the family spent \$75 on Cooling, \$150 on Cooking and \$150 on the “other” category. They spent \$897 on Heating and \$228 on Hot Water.



Teaching Example 3

Carlos earns about \$60 per month. Make a circle graph to show how he makes his money.

$$\underline{0.1666}$$

$$1/6 = 6 \overline{)1.0000}, \text{ or } 16.7\%$$

$$\begin{array}{r} \underline{6} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$

5.8g Circle Graphs

	Amount Spent	Fractional Part	Measure of Central Angle	Percent spent
School supplies	\$10	$\frac{10}{60}$ or $\frac{1}{6}$	$\frac{1}{6}(360)$ = 60 = 6	16.7%
Clothing	\$15	$\frac{15}{60}$ or $\frac{1}{4}$	$\frac{1}{4}(360)$ = 90 = 4	25%
Allowance	\$5	$\frac{5}{60}$ or $\frac{1}{12}$	$\frac{1}{12}(360)$ = 30 = 12	8.3%
Spending money	\$20	$\frac{20}{60}$ or $\frac{1}{3}$	$\frac{1}{3}(360)$ = 120 = 3	33.3%
Savings	\$10	$\frac{10}{60}$ or $\frac{1}{6}$	$\frac{1}{6}(360)$ = 60 = 6	16.7%
TOTAL	\$60	1	360	100%

