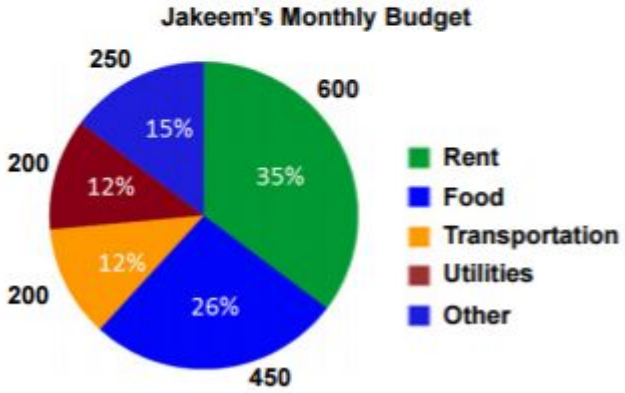
The Circle Graph

Circle Graphs are sometimes called **Pie Charts**.

They are circle-shaped graphs that are used to **compare a part to a whole**.

For example:



Example 1 - Step 1: Percentages

Jakeem's Monthly Budget	
Expenses	Amount
Rent	$600
Food	$450
Transportation	$200
Utilities	$200
Other	$250
Total	$1700

First, we will calculate the percentages using a proportion.

$$\frac{part}{total} = \frac{\%}{100}$$

For **rent**, we will use the proportion:

$$\frac{600}{1700} = \frac{x}{100}$$

Next, we have the **food** expenses:

$$\frac{450}{1700} = \frac{x}{100}$$

Example 1 - Step 2: Angles

Jakeem's Monthly Budget		
Expenses	**Amount**	**Percent**
Rent	$600	35%
Food	$450	26%
Transportation	$200	12%
Utilities	$200	12%
Other	$250	15%
Total	$1700	100%

Once you have the percentages, the next step is to convert to angles.

To convert to an angle, we can multiply the percentages (as decimals) by 360°.

Rent: 360 x **0.35** = **126°** Recall that **35%** = **0.35**

So when we draw the circle graph, the angle that represents the rent will be 126 degrees.

To keep track of the angles, let's add another column to our table.

Example 1 - Step 2: Angles

We will work our way through each expense, converting to an angle and then adding it to the table so that all of the information will be in one place.

Food: 360 x 0.26 = **93.6°** Recall that 26% = **0.26**

Transportation & Utilities:

360 x 0.12 = **43.2°**

Recall that 12% = **0.12**

Other: 360 x 0.15 = **54°** Recall that 15% = **0.15**

Jakeem's Monthly Budget			
Expenses	Amount	Percent	Angle
Rent	$600	35%	126°
Food	$450	26%	93.6°
Transportation	$200	12%	43.2°
Utilities	$200	12%	43.2°
Other	$250	15%	54°
Total	$1700	100%	360°

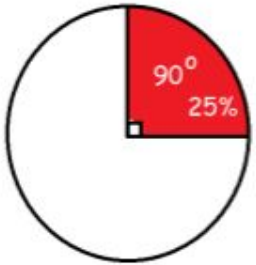
We can check our total to ensure that we have a total of **360°**.

126° + 93.6° + 43.2° + 43.2° + 54° = **360°**

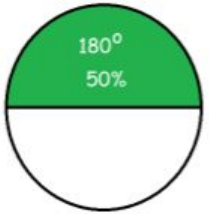
The angles are used to form the circle graph.

Example 1- Step 3: Drawing our Circle

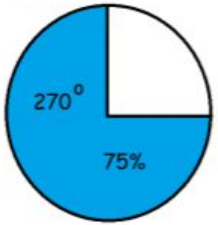
Recall that a 90° angle inside a circle would look like this:



A 180° angle would look like this:



And a 270° angle would look like this:



Example 1: Drawing our Circle

Keeping these angles and percentages in mind will help you be able to check your circle graph and your calculations to ensure that they make sense.