

Section 4.7 – Constructing Circle Graphs

Name: _____

Jan 26-1:38 PM

Method 1 - Percent Circles

Ex. 1

There are 23 students in Mr. Reid’s Grade 7 class. When he asked them their favourite subject, 11 of them said Math (of course), 6 said French, 4 said Science, and 2 said Basket Weaving.

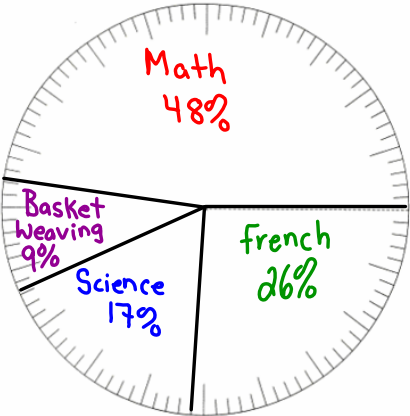
Create a circle graph of the data by filling in the chart provided and then using the percent circle below:

Subject	Math	French	Science	Basket Weaving
Fraction	$\frac{11}{23} = 0.48$	$\frac{6}{23} = 0.26$	$\frac{4}{23} = 0.17$	$\frac{2}{23} = 0.09$
Percent	48%	26%	17%	9%

$$\begin{array}{r} 11 \\ 6 \\ 4 \\ + 2 \\ \hline 23 \\ \text{Students} \\ \text{in total} \end{array}$$

check:

$$\begin{array}{r} 48\% \\ 26\% \\ 17\% \\ + 9\% \\ \hline 100\% \end{array}$$



Jan 26-1:39 PM

Ex. 2

The Grade 9 students at CBI were asked their favourite hockey team. 117 picked the Montreal Canadiens, 47 picked the Pittsburgh Penguins, 35 picked the Boston Bruins, and 15 for some bizarre reason) picked the Toronto Maple Leafs.

Create a circle graph of the data by filling in the chart provided and then using the percent circle below:

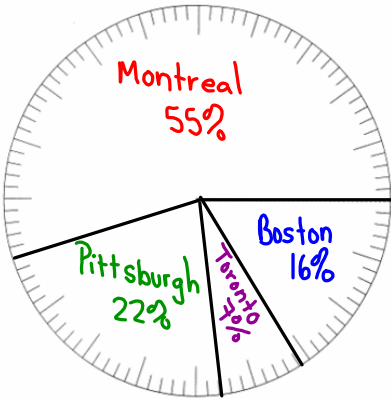
Team	Montreal	Pittsburgh	Boston	Toronto
Fraction	$\frac{117}{214} = 0.55$	$\frac{47}{214} = 0.22$	$\frac{35}{214} = 0.16$	$\frac{15}{214} = 0.07$
Percent	55%	22%	16%	7%

$$\begin{array}{r} 117 \\ 47 \\ 35 \\ + 15 \\ \hline 214 \end{array}$$

total number of gr. 9 students

Check:

$$\begin{array}{r} 55\% \\ 22\% \\ 16\% \\ + 7\% \\ \hline 100\% \end{array}$$



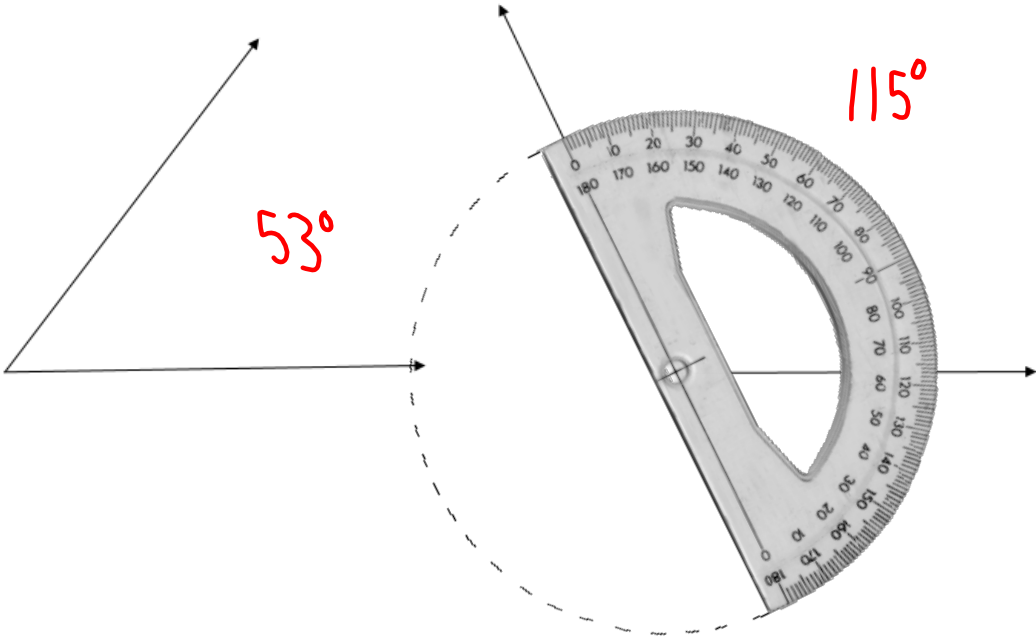
Jan 26-1:40 PM

Method 2 - Protractor

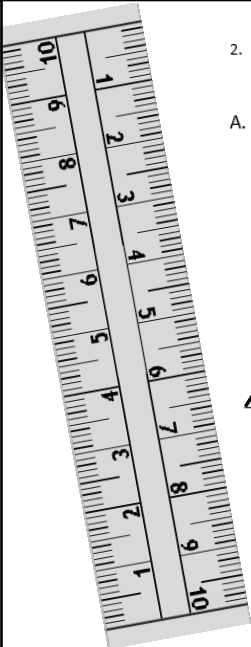


In most instances you will be expected to graph circle graphs using a protractor instead of using a percent circle. This will involve determining the percent represented by each fraction, converting the percent to degrees, and then using a protractor to draw the appropriate angle.

1. Use a protractor to measure each angle accurately below:



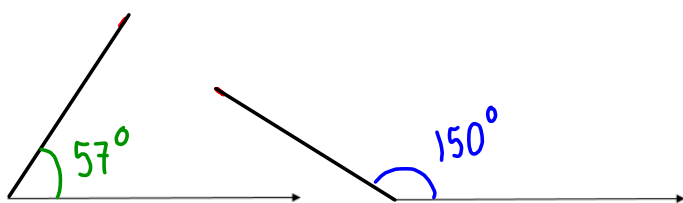
Jan 26-1:40 PM

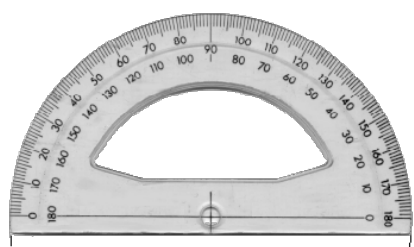


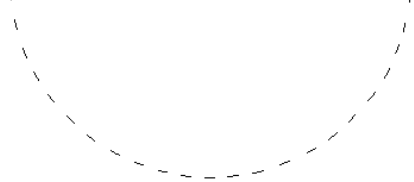
2. Draw each angle using a protractor and ruler:

A. 57°

B. 150°



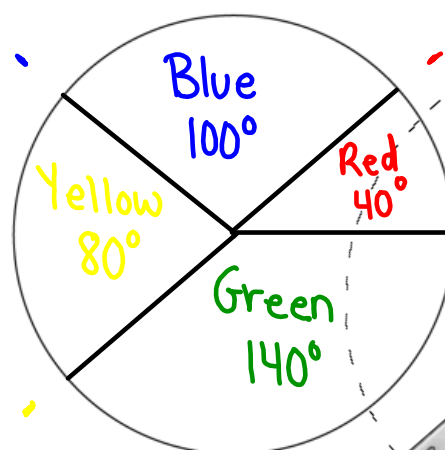


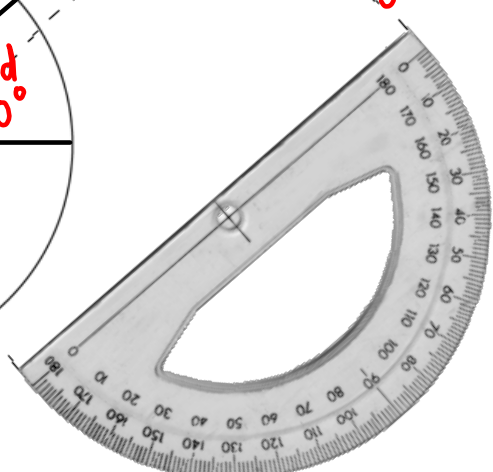


Jan 26-1:40 PM

3. Graph and label each sector on the circle below:

Colour	Red	Blue	Yellow	Green
Degrees	40	100	80	140





Check:

40

100

80

+ 140

360°

Jan 26-1:40 PM

4. Graph and label each sector on the circle below:

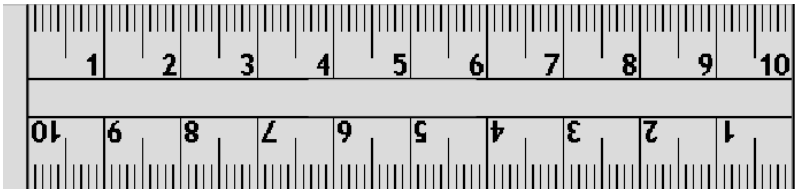
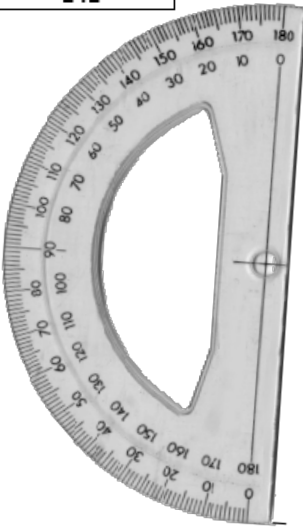
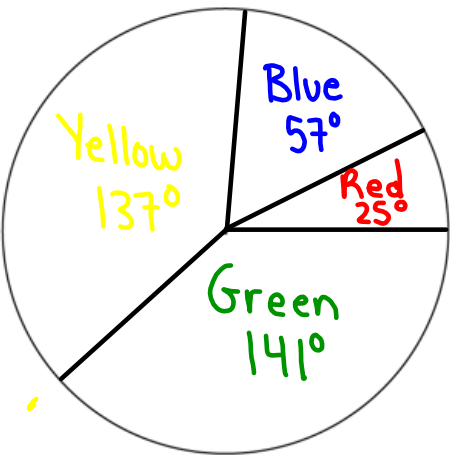
Colour	Red	Blue	Yellow	Green
Degrees	25	57	137	141

25
57
+141

223

Yellow:
360
-223

137



Jan 26-1:41 PM

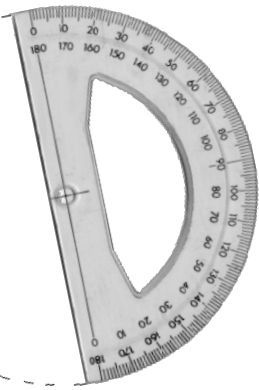
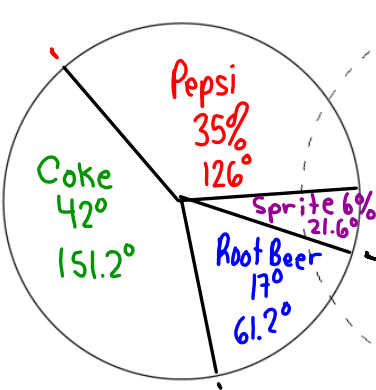
5. There are 360° in a circle. The data below represents what percentage of people picked as their favourite soft drink. Change each percent to degrees:

Soft Drink	Pepsi	Coke	Root Beer	Sprite
Percent	35%	42%	17%	6%
Degrees	0.35 x 360 126°	0.42 x 360 151.2°	0.17 x 360 61.2°	0.06 x 360 21.6°

Check:
126.0
151.2
61.2
+21.6

360.0
360°

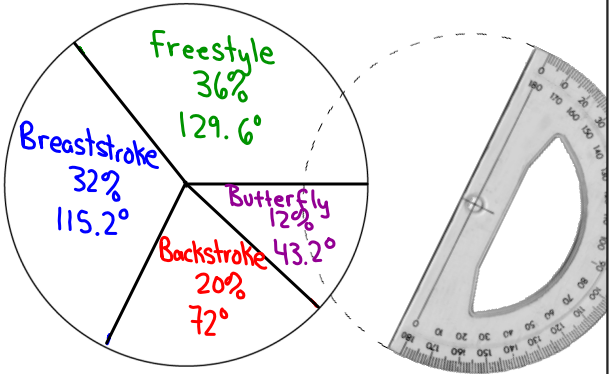
Graph the data below:



Jan 26-1:41 PM

6. Now we put all the steps together.
- The table shows the number of members of the swim team who competed at the swim meet. Each member competed in only one event.
- Complete the table below and use it to construct a circle graph.

Swim Team Member Participation				
Event	Frequency	Fraction	Percent	Degrees
Freestyle	18	$\frac{18}{50} = 0.36$	36%	$0.36 \times 360 = 129.6^\circ$
Breaststroke	16	$\frac{16}{50} = 0.32$	32%	$0.32 \times 360 = 115.2^\circ$
Backstroke	10	$\frac{10}{50} = 0.20$	20%	$0.20 \times 360 = 72^\circ$
Butterfly	6	$\frac{6}{50} = 0.12$	12%	$0.12 \times 360 = 43.2^\circ$
Total	50	1	100%	360°

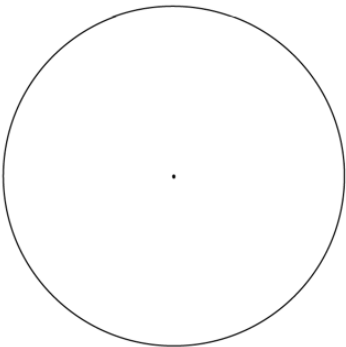


Jan 27-1:14 PM

7. To help reduce the cost of the Grade 7 camp weekend, the following amount of money was donated by each group: parents \$525, teachers \$230, local businesses \$340. Students also held a cake auction, which raised \$720.
- Complete the table below and use it to construct a circle graph.

Fundraiser	Frequency	Fraction	Percent	Degrees
Parents	525	$\frac{525}{1815}$	29%	$0.29 \times 360 = 104.4^\circ$
Teachers	230	$\frac{230}{1815}$	13%	$0.13 \times 360 = 46.8^\circ$
Businesses	340	$\frac{340}{1815}$	19%	$0.19 \times 360 = 68.4^\circ$
Students	720	$\frac{720}{1815}$	40%	$0.40 \times 360 = 144^\circ$
Total	1815		101%	

⊗ Not a great question

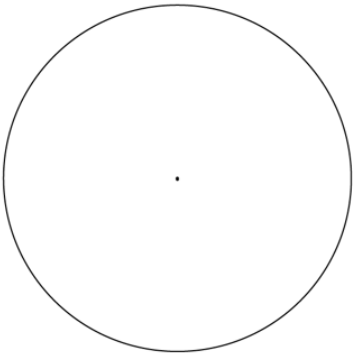


Jan 26-1:41 PM

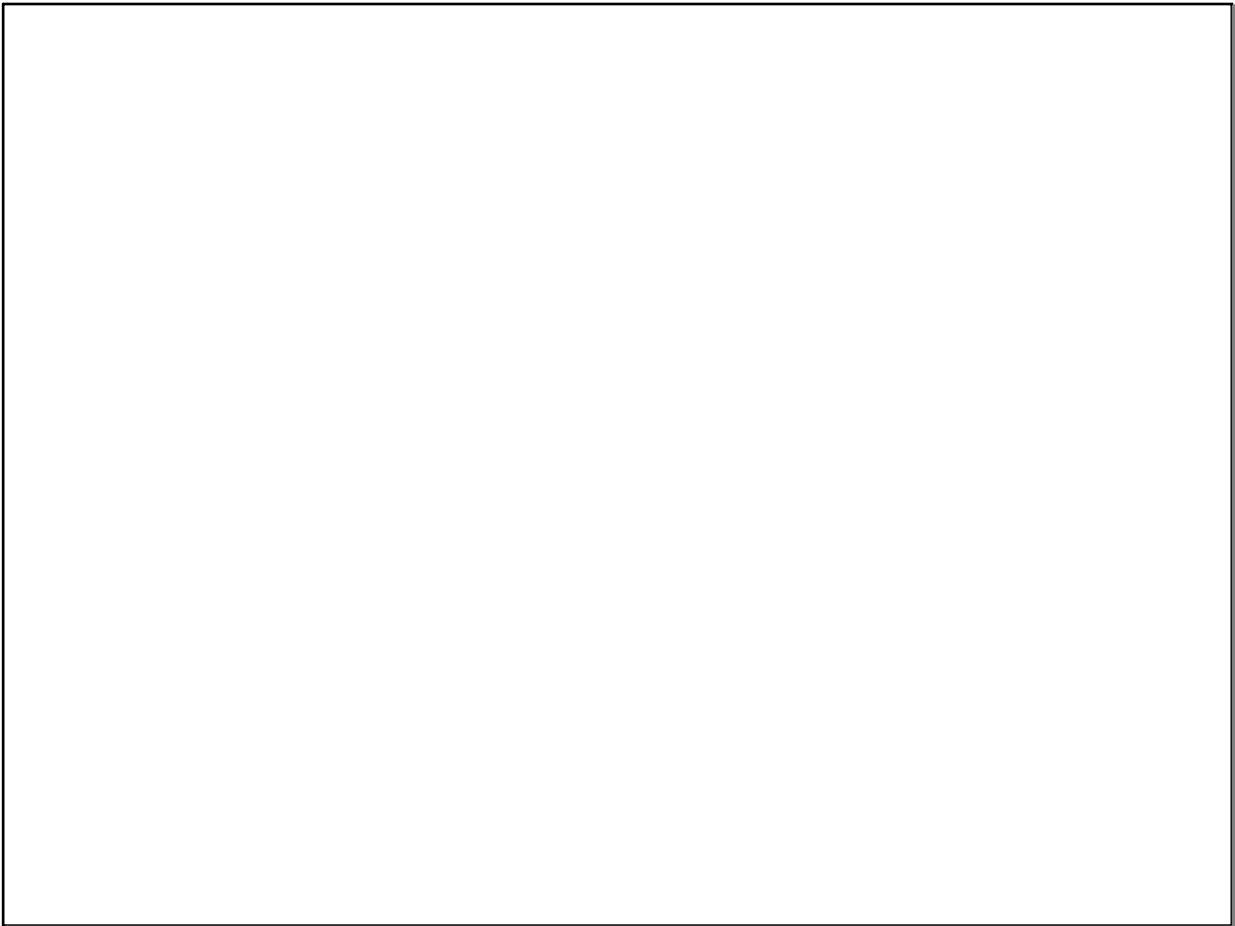
8. Ms. Vardy's Grade 7 classes were surveyed to see what their favourite winter activity was. 22 liked downhill skiing, 18 liked snowboarding, and 13 liked making snow angels in fluffy white snow.

Complete the table below and use it to construct a circle graph.

Activity	Frequency	Fraction	Percent	Degrees
Skiing	22	22/53	42%	
Snowboard	18	18/53	34%	
Angels	13	13/53	25%	
Total	53		101%	



Jan 26-1:43 PM



Jan 28-9:43 AM