11.1 Interpreting Circle Graphs

GOAL

Read and analyze the information in a circle graph.

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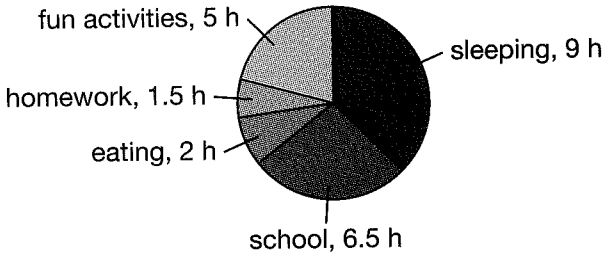
A **circle graph** is a graph that shows how parts make up a whole.

1. Jacob surveyed his classmates about how they spent their time. He displayed his data in a circle graph shown on the right.

Time Spent in One Day



a) How much time do Jacob's classmates spend on homework? _____

b) What do Jacob's classmates spend the most time doing? _____

c) Does the graph show how many hours are in a day? Explain.

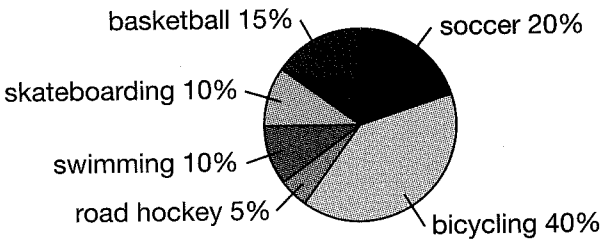
_____

_____

_____

2. Ashley surveyed her classmates about their favourite summer activities. She displayed her data in this circle graph.

Favourite Summer Activities



a) What is the students' favourite activity?

_____

b) What is the students' least favourite activity?

_____

c) Ashley wants to choose two activities that most of her classmates enjoy. Which activities should she choose?

_____

d) Ashley asked 20 students for data. How many students chose each activity?

11.2 Exploring Circle Graphs

GOAL

Predict how data might be distributed.

1. Choose one of the topics below: _____

   - favourite pets—options: a) dog, b) cat, c) bird, d) reptile, e) rodent
   - favourite way to travel—options: a) airplane, b) train, c) car, d) bicycle, e) walking
   - favourite sport—options: a) hockey, b) soccer, c) football, d) basketball, e) baseball

2. Survey 10 people on your chosen topic. Fill in the chart with your data.

Options	Tallies	Percent
a)		
b)		
c)		
d)		
e)		

3. If you graphed your data, would it look similar to any of the graphs on the right?

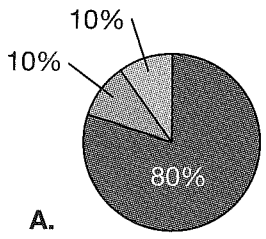
   Explain why your data does or does not look like one of these graphs.

   _____

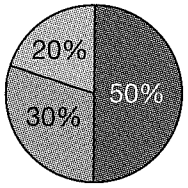
   _____

   _____

   _____



A.



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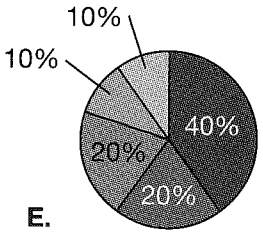

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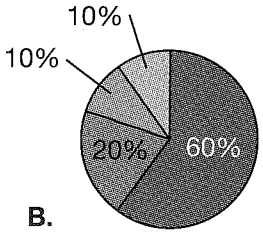
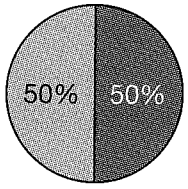


B.



D.

11.3 Constructing Circle Graphs

GOAL

Create a circle graph for a data set.

Liam asked his friends to choose the type of television show they watch the most.

He organized his data in a chart.

Type of Television Show	Number of People	Percent (%)
reality show	6	
sports program	8	
game show	4	
comedy sitcom	14	
cartoon	6	
music video	2	

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To calculate the percent, divide the number of people who chose each option by the total number of people surveyed, and multiply by 100.

For example,
Number of people: 4

Total number of people surveyed: 20

$\frac{4}{20} \times 100 = 20\%$

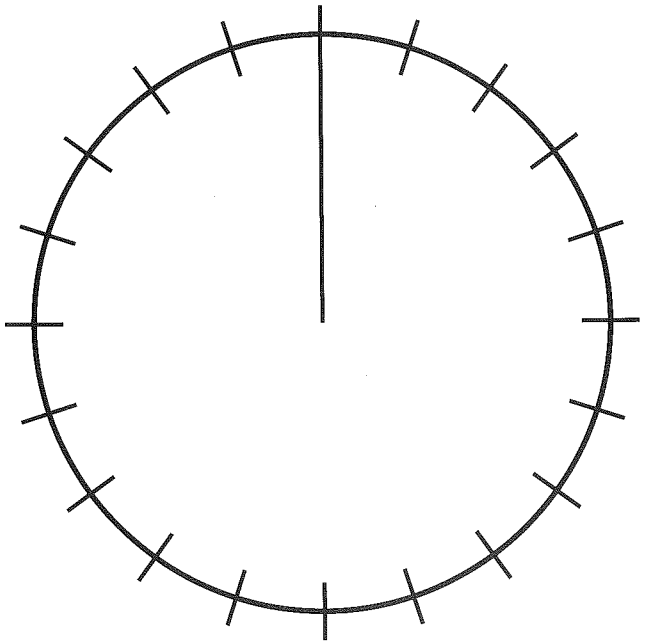
1. How many people did Liam survey?

   _____

2. Fill in the last column in Liam's chart by calculating each percent.

3. Display the data on the 100% circle template below. Each mark represents 5%.

4. Label the sections of your graph, and give the graph a title.



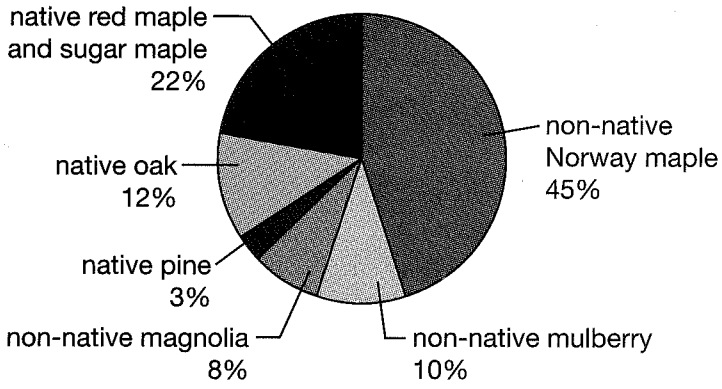
11.4 Communicate about Circle Graphs

GOAL

Use data and graphs to support conclusions.

1. Yan wrote a report about the types of trees planted in her neighbourhood. She wants to use the report to convince the town planners to plant more native trees.

Trees in Our Neighbourhood



I constructed a circle graph because I wanted to show the parts of a whole. I noticed that we plant many non-native trees. I think my graph shows this.

a) What questions would you ask to help Yan draw more conclusions in her report?

_____

_____

b) How could Yan use her graph to convince the town planners to plant more native trees?

_____

_____

c) Rewrite Yan's report. Use your suggestions from parts (a) and (b).

_____

_____

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Communication Checklist

- ☑ Did you include all the important details?
- ☑ Did you make reasonable conclusions?
- ☑ Did you justify your conclusions?

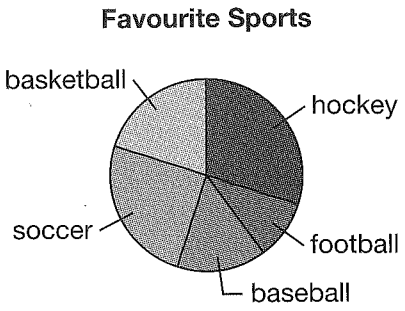
Chapter 11 Test Yourself

Circle the letter of the correct answer.

1. Which set of data matches the circle graph on the right?

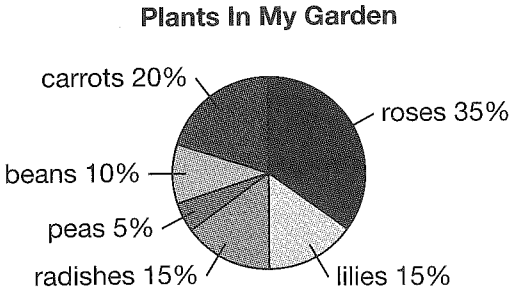
   A. Set 1 **B.** Set 2 **C.** Set 3 **D.** none of the sets

Sport	Set 1	Set 2	Set 3
hockey	20%	30%	30%
football	10%	10%	40%
baseball	15%	15%	15%
soccer	40%	25%	10%
basketball	15%	20%	5%



2. Nestor collected data on the plants in his garden, and displayed his data in a circle graph. What percent of Nestor's plants are vegetables?

   A. 20% **B.** 30% **C.** 40% **D.** 50%



3. Nestor has 20 plants in his garden. How many are bean plants?

   A. 2 plants **B.** 3 plants **C.** 4 plants **D.** 5 plants

4. How many of Nestor's plants are flowers?

   A. 5 plants **B.** 10 plants **C.** 15 plants **D.** 20 plants

5. How many of Nestor's plants are radishes?

   A. 2 plants **B.** 3 plants **C.** 4 plants **D.** 5 plants

6. What can Nestor use his circle graph to show?

   A. that 50% of his plants are flowers

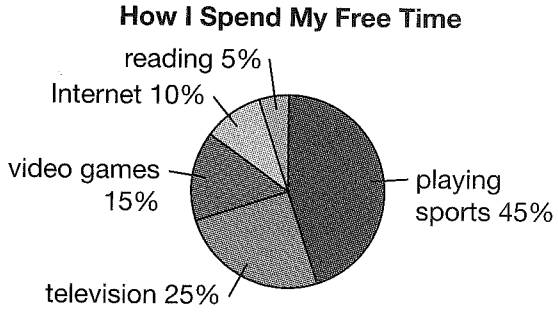
   B. that 25% of his plants are carrots

   C. that 5% of his plants are beans

   D. that 30% of his plants are peas and radishes

7. Jessica used a circle graph to show how she spends her free time. What percent of her free time does she spend playing video games and watching television?

   A. 20% **B.** 30% **C.** 40% **D.** 50%



8. Jessica collected data for her graph over 80 h in total. How many hours did she spend on the Internet?

   A. 4 h **B.** 6 h **C.** 8 h **D.** 10 h

9. How many hours did Jessica spend playing sports?

   A. 36 h **B.** 40 h **C.** 44 h **D.** 48 h

10. What can Jessica use her circle graph to show?

    A. that she is physically active more than 50% of her free time

    B. that she spends 10% of her day on the Internet

    C. that she spends 5% of her free time reading

    D. that she has 80 h of free time per month