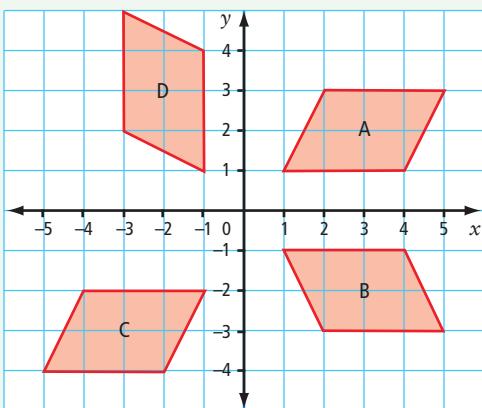


Chapters 1–4 Review

Chapter 1 Coordinates and Design

1. a) Plot the following points on a coordinate grid: A($-3, 5$), B($-1, 3$), C($0, 2$), D($1, 3$), E($2, 0$), F($3, -1$).
b) Which one point seems out of place?
c) The coordinates of the other five points follow a pattern. Name and plot two new points G and H that follow the pattern.
2. Create square DEFG on a coordinate grid. Start at $(2, -2)$. The square must have a perimeter of 16 units. The points must lie in all four quadrants. Label the vertices. What are the ordered pairs?
3. Nicholas is drawing plans for his garden on a coordinate grid. The coordinates of three vertices of a rectangular flower bed are $(5, 2)$, $(-3, 2)$, and $(-3, -3)$. What are the coordinates of the fourth vertex?
4. a) What transformation would move parallelogram A to parallelogram B?
b) What transformation would move parallelogram A to parallelogram C?
c) What transformation would move parallelogram A to parallelogram D?



5. Construct $\triangle ABC$ with vertices at $A(0, 0)$, $B(4, 0)$, and $C(0, 4)$. Rotate $\triangle ABC$ 90° clockwise about the centre of rotation at $(0, 0)$. Then, reflect $\triangle A'B'C'$ in the y -axis.
 - a) Draw $\triangle A'B'C'$. What are the coordinates of the vertices?
 - b) Draw $\triangle A''B''C''$. What are the coordinates of the vertices?
 - c) Describe the horizontal and vertical distance between vertex B and B'' .
6. A cheerleading squad forms a square with vertices at $T(-2, -4)$, $E(-2, -7)$, $A(-5, -7)$, and $M(-5, -4)$. The cheerleaders rotate the square 90° counterclockwise about the centre of rotation $R(-2, -1)$. Then, they move square $T'E'A'M'$ 2 units horizontally left and 3 units vertically up to form square $T''E''A''M''$.
 - a) What are the coordinates of vertices T'' , E'' , A'' , and M'' ?
 - b) Describe the horizontal and vertical distances between vertex E and E'' .

Chapter 2 Operations on Decimal Numbers

7. Without calculating the answer, place the decimal point in the correct position. Show your thinking.
 - a) $0.458 + 0.319 + 0.2 = 9770$
 - b) $48.31 - 27.65 = 2066$
 - c) $5.9 \div 0.314 = 187898$
 - d) $24 \times 0.083 = 19920$

- 8.** Estimate and then calculate.

a) $6.7 + 1.15$

b) $9.6 - 2.8$

c) 2.6×3.7

d) $4.06 \div 0.7$

- 9.** Calculate the value of each expression.

a) $4.2 + 0.6 \div 3 - 0.3 \times 4$

b) $17.5 - (1.5 \times 2) \div 5 + 2.8$

- 10.** During summer vacation, Remi and Kali each earn \$10.25 per hour for doing odd jobs. One weekend, they each worked 9.5 h. How much did they earn altogether?



- 11.** On a shopping trip for school supplies you buy a package of coloured pencils, 7 scribblers, a ruler, a calculator, and 12 pencils.

Glue Stick	\$1.97
Coloured pencils	\$7.46
Calculator	\$8.77
Pencils	6@\$1.97
Erasers	\$1.87
Ruler	\$0.94
Scribbler	\$1.97
Pencil case	\$3.96

- a) Estimate the total cost before tax. Is your estimate over or under the total?
b) What is the total cost of all your items?
c) What is the total bill including any PST and GST?
d) You give the cashier two \$20 bills. How much change should you receive?

- 12.** Audra and Tom are working in the school kitchen on Soup Day. Their job is to make 8 L of chicken noodle soup in a large pot. They have only small cans (0.284 L) of soup. They will add 1 can of water for each can of soup.

- a) How many small cans of soup are needed to make 8 L?
b) How many students could be served if each student received 0.190 L of the soup?
c) Small cans of soup each cost \$0.97. The school sells soup at \$1.00 a bowl. What is the profit on the 8 L of soup?
d) What assumptions do you need to make to answer part c)?
e) What other costs might be involved in the sale of soup?

Chapter 3 Geometry and Measurement

- 13. a)** Using only parallel line segments and perpendicular line segments, construct a rectangle with a base of 15 cm and a height of 10 cm.

- b)** Show how the rectangle can be made into a parallelogram with a base of 15 cm and height of 10 cm.

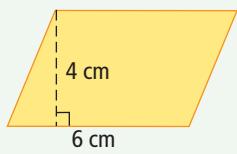
- c)** Show how the rectangle can be made into two triangles with a base of 15 cm and a height of 10 cm.

- 14.** Using only perpendicular bisectors and angle bisectors, construct the following:

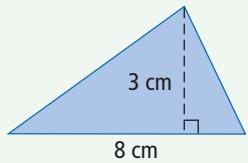
- a)** a T that is 10 cm high and 10 cm wide
b) an arrow that is 10 cm high and 6 cm wide

15. What is the area of each shape?

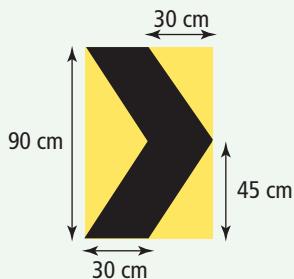
a)



b)



16. The road sign shown is a chevron (arrowhead). This warning sign is posted in groups to guide drivers around sharp curves in the road.



- a) What is the area of the black chevron?
- b) What is the total area of the yellow triangles?

Chapter 4 Fractions, Decimals, and Percents

17. Draw a number line. Place each of the following numbers on your number line.

a) $62\frac{1}{2}\%$ b) 0.6 c) $\frac{2}{3}$

18. Show each fraction as a repeating decimal.

a) $\frac{4}{9}$ b) $\frac{3}{11}$ c) $\frac{2}{7}$

19. Show each terminating decimal as a fraction.

a) 0.35 b) 0.2 c) 0.025

20. Three brands of recordable CD-ROMs are checked for defects.

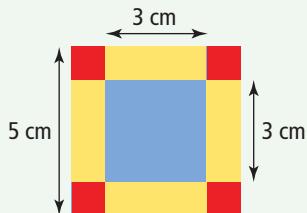
Brand	Number Tested	Number Passed
Electro-Zip	20	15
Ultraback	10	7
A-Retrieve	30	23

- a) What fraction of each brand passed the test? What percent of each brand passed?
- b) Which brand of CD-ROM seems most reliable? Justify your answer.

21. Jeremy sold 220 out of 250 newspapers. Maria sold 85% of her 260 newspapers.

- a) Who sold the most newspapers? How many did that person sell?
- b) Who sold the greatest percent of newspapers? What was the percent?

22. At a fairground game, you can throw a dart at the square target to win a prize.

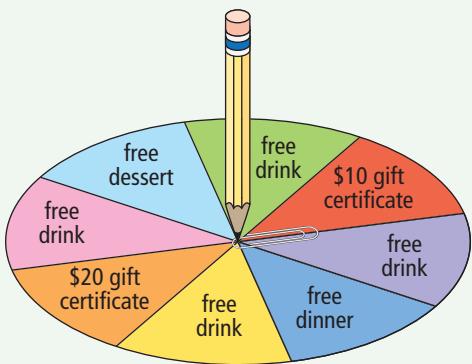


- a) Which do you think is easiest to hit: red, yellow, or blue? Explain your choice.
- b) Every dart that lands in one of the coloured regions is a winner. What fraction of the total area is each colour? What percent of the total area is each colour?
- c) Rank the colours in order from greatest to least area. Which colour should get the best prize, and why?

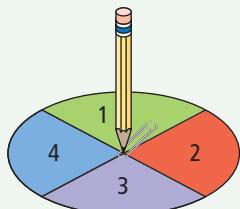
Chapters 5–8 Review

Chapter 5 Probability

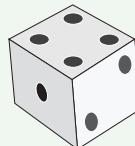
1. It is Paul's birthday. The restaurant where he is having his party offers him a prize from the birthday spinner. All eight sections on the spinner are equal in size. Express the probability of each of the following events as a fraction, a ratio, and a percent.



- a) What is the probability of Paul winning a free drink?
- b) What is the probability of him winning a gift certificate?
- c) What is the probability of him winning a \$50 gift certificate?
- d) What is the probability of him winning a prize?
2. Use a tree diagram, table, or other graphic organizer to show the sample space for tossing a coin and spinning the spinner.



3. A camp guide is trying to read her list of names, but the last two letters of a student's name are smudged. She knows that both letters are vowels (a, e, i, o, or u).
- a) List the sample space for the last two letters.
- b) What is the probability that the last two letters are ee?
- c) What is $P(e, e \text{ or } o)$?
- d) What is the probability that at least one letter is e?
4. A six-sided die is rolled 30 times. The following tally chart shows the experimental outcomes.

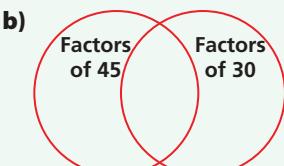
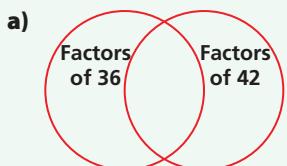


Die Result	Experimental Results
1	
2	
3	
4	
5	
6	

- a) From the tally chart, what is the experimental probability of rolling a 3?
- b) What is the theoretical probability of rolling a 3?
- c) Compare the experimental probability and theoretical probability.

Chapter 6 Introduction to Fraction Operations

5. Use divisibility rules to determine the factors of each pair of numbers. Copy the Venn diagrams and use them to record your results.



6. Add. Write each answer in lowest terms.

a) $\frac{2}{5} + \frac{1}{5}$

b) $\frac{1}{14} + \frac{13}{14}$

c) $\frac{1}{8} + \frac{7}{8}$

d) $\frac{1}{12} + \frac{7}{12}$

7. Subtract. Write each answer in lowest terms.

a) $\frac{6}{7} - \frac{4}{7}$

b) $\frac{7}{15} - \frac{7}{15}$

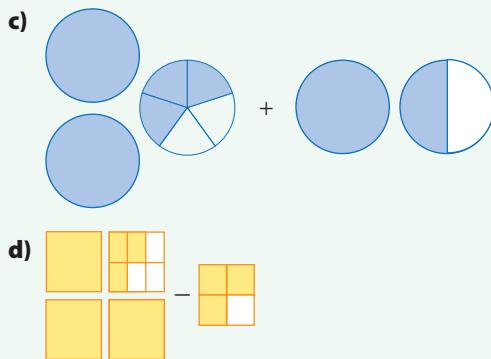
c) $\frac{7}{8} - \frac{3}{8}$

d) $\frac{7}{10} - \frac{1}{10}$

8. Jessie needs $\frac{7}{8}$ of a bag of nails to build a skateboard ramp. She has $\frac{5}{8}$ of a bag. André gives her another $\frac{1}{8}$ of a bag. Does she have enough? If not, how much more of a bag does she need?

Chapter 7 Add and Subtract Fractions

9. Write an expression to represent each diagram. Then add or subtract.



10. Add or subtract. Write each answer in lowest terms.

a) $\frac{1}{3} + \frac{4}{9}$

b) $\frac{7}{10} - \frac{1}{4}$

c) $4\frac{5}{6} - 1\frac{1}{6}$

d) $2\frac{1}{4} + 1\frac{1}{4}$

e) $1\frac{2}{3} - \frac{1}{4}$

f) $2\frac{4}{5} + 5\frac{1}{2}$

11. David and Serena are selling cookies at the school bake sale. David has $3\frac{5}{12}$ trays left to sell. Serena has $2\frac{3}{4}$ trays left.

a) David sells another $1\frac{5}{6}$ trays. How much does he have left now?

b) Serena sells another $2\frac{3}{8}$ trays. How much does she have left?

c) Serena gives her remaining cookies to David to sell. How much in total does he now have to sell?

Chapter 8 Circles

Use 3.14 for π in calculations.

Answer to the nearest tenth of a unit, unless otherwise indicated.

12. Using 1-cm grid paper, plot points A(2, -3) and B(-1, 4).

a) Using point A as the centre, construct a circle of radius 4 cm.

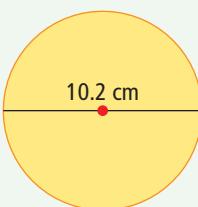
b) Does point B lie within the circle?

- 13.** What is the circumference and area of each circle?

a)



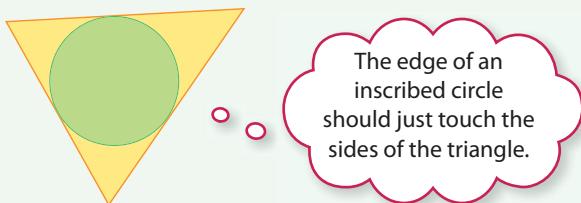
b)



- 14.** A wheelchair wheel has a radius of 30 cm. It makes one complete rotation in a straight line on a flat surface. How far, horizontally, has the centre of the wheel travelled from where it started?



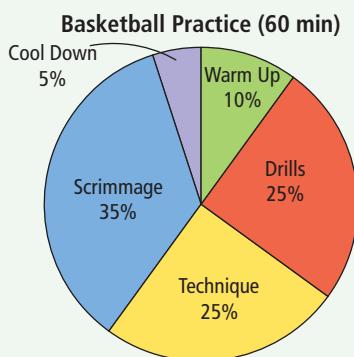
- 15.** Construct an inscribed circle.



- Draw a triangle with angles 50° , 70° , and 60° . Label it PQR.
- Construct the bisectors of each angle. Label the point of intersection S.
- With a compass, construct an inscribed circle using point S as the centre.

- 16.** If the radius of a circle is doubled, what happens to the area of the new circle? Use examples to show how you know.

- 17.** A basketball coach uses the following circle graph to plan his team's practices.



- On what activity do team members spend the most time?
- On what activities do team members spend a total of 70% of their time? Give two possible answers.
- If practice starts at 4:00 p.m., write a possible schedule for the practice.

- 18.** Some Grade 7 students were surveyed about their favourite weekend activities. Make a circle graph to display the data.



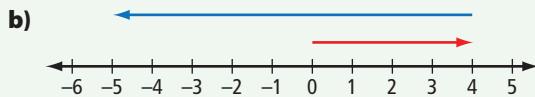
Weekend Activity	Number of Students
Go to a movie	3
Play a sport	9
Read a book	9
Play video games	3
Other	6

Chapters 9–12 Review

Chapter 9 Add and Subtract Integers

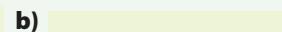
1. What addition statement does each diagram represent?

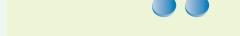
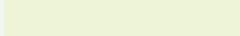
a) 



2. What subtraction statement does each diagram represent?

a) 

b) 



3. What is each sum or difference?

a) $(+5) + (-5)$

b) $(+7) + (-4)$

c) $(-9) - (-7)$

d) $(+8) - (-8)$

e) $(+3) - (+7)$

f) $(-2) - (-9)$

4. One October morning in Prince Edward, Saskatchewan, the temperature was -3°C . In the late afternoon, the temperature was 12°C higher. What was the temperature in the late afternoon?

5. The surface of Great Bear Lake is 156 m above sea level. The bottom of the lake is 257 m below sea level. Estimate and calculate the depth of the lake.

Chapter 10 Patterns and Expressions

6. Describe each pattern. What are the next two numbers in each pattern?

a) 1, 4, 7, 10, ...

b) 8, 13, 18, 23, 26 ...

c) 17, 14, 11, 8, ...

7. Look at the following number pattern.

$$\frac{2}{30} = 0.0666\ldots, \text{ or } 0.0\overline{6}$$

$$\frac{5}{30} = 0.1666\ldots, \text{ or } 0.1\overline{6}$$

$$\frac{8}{30} = 0.2666\ldots, \text{ or } 0.2\overline{6}$$

- a) Describe the pattern.

- b) What is the next fraction in the pattern?

- c) What is $\frac{17}{30}$ written as a repeating decimal using bar notation?

8. The tile pattern shown is being used to cover a bathroom floor.

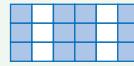


Figure 1

Figure 2

Figure 3

- a) Make a table showing the number of white and blue tiles in the first five designs.

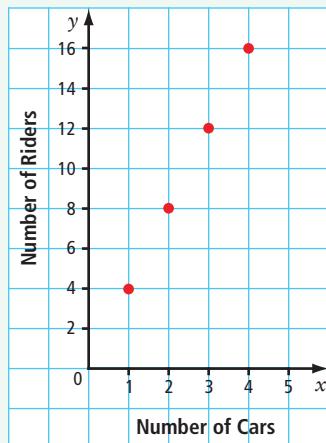
- b) Describe the pattern for the number of blue tiles in relation to the number of white tiles.

- c) Choose a variable and tell what it represents. Then use the variable to write an algebraic expression for the number of blue tiles.
- d) How many blue tiles will there be if there are 24 white tiles?
9. The expression $2n + 4$ represents the perimeter of any figure in this pattern, where n is the figure number.



Figure 1 Figure 2 Figure 3

- a) What would be the perimeter of Figure 12?
- b) Make a table of values for the first six figures in the pattern.
10. The graph shows the number of roller coaster riders allowed on a roller coaster train, depending on the number of cars that make up the train.



- a) Make a table of values for the first five values of x starting at $x = 1$.
- b) What is an algebraic expression for the number of riders in relation to the number of cars?
- c) Describe the pattern of points on the graph in two different ways.

- d) If there are 10 cars in the roller coaster train, how many riders are allowed on the train?

Chapter 11 Solving Equations

11. The diagram represents an equation.

$$+ \quad - \quad =$$

- a) What are the two expressions that make up this equation?
b) What is the equation?

12. Solve by inspection. Verify your answer.

a) $k - 7 = 19$	b) $p + 12 = 12$
c) $2n = 18$	d) $\frac{c}{8} = 3$

13. Solve the equation modelled by each diagram. Check your solution.

a)

$$+ \quad + \quad + \quad =$$

b)

$$+ \quad =$$

14. The formula for the perimeter of an equilateral triangle is $P = 3s$. What side length is needed to make an equilateral triangle with a perimeter of 48 cm?

15. An adventure company charges \$95 per day for canoeing equipment plus \$10 per student for food. The total cost for one day can be modelled using the equation $C = 10n + 95$.
- a) What do the variables C and n represent?
b) Students in one class raised \$345 for a one-day trip. How many students can go?

Chapter 12 Working With Data

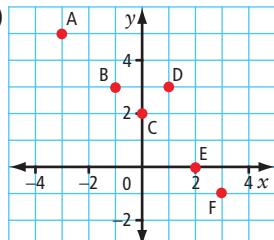
- 16.** The following numbers of haircuts were given at a salon in the last five days:
25, 29, 25, 26, 35.
a) What is the mode?
b) What is the median?
c) What is the mean?
- 17.** The mode is 6 for the set of numbers 3, 4, 4, 5, 6, 6, 7, 8, 9, 10, x , and y . What are possible whole number values for x and y ?
- 18.** Robert takes his dog for a walk six days a week. The following times indicate how long they walked last week:
54 min, 56 min, 60 min, 58 min, 55 min, 28 min
a) What is the range?
b) Which time may be an outlier?
c) Why might this value be so different from the others?
d) If you remove the outlier, what is the new range?



- 19.** Steven scored 338 points in 26 basketball games this fall. Micha played in 8 fewer games than Steven. Her mean score per game was 0.5 points higher than Steven's. How many total points did Micha score in her basketball season?
- 20.** Thirty students wrote a science test. Twenty-five students achieved a mean mark of 74%. The other five students had a mean mark of 45%. What was the class mean mark? Express your answer as a percent.
- 21.** Melissa found the following prices for five different brands of orange juice in the refrigerated section at the grocery store:
\$3.29, \$2.99, \$3.49, \$6.98, and \$3.79.
a) What is the range?
b) What are the median and the mean?
c) Which is the best measure of central tendency for the data?
d) Identify any possible outlier(s). Should the outlier(s) be removed from the data set? Explain why or why not.
e) How would removing the outlier(s) affect the median and the mean?
- 22.** Roach-Away developed a new chemical to destroy cockroaches. Ten tests were performed. The percent of roaches destroyed were:
60, 99, 90, 99, 70, 91, 88, 71, 69, 99
If you were the owner of the company, which measure of central tendency would you use for advertising? Explain your choice.

Chapters 1–4 Review, pages 152–154

1. a)



b) D(1, 3) c) G(-2, 4), H(1, 1)

2. D(2, -2), E(2, 2), F(-2, 2), G(-2, -2)

3. (5, -3)

4. a) reflection b) translation c) rotation

5. a) A'(0, 0), B'(0, -4), C'(4, 0)

b) A''(0, 0), B''(0, -4), C''(-4, 0)

c) 4 units horizontally left, 4 units vertically down

6. a) T''(-1, 2), E''(2, 2), A''(2, -1), M''(-1, -1)

b) 4 units horizontally right, 9 units vertically up

7. a) 0.9770 b) 20.66 c) 18.7898 d) 1.992

8. a) 7; 7.85 b) 7; 6.8 c) 12; 9.62 d) 4; 5.8

9. a) 3.2 b) 19.7

10. \$194.75

11. a) Answers may vary. \$36.00 b) \$34.90

c, d) Answers will vary by province or territory.

12. a) approximately 15 cans, 14 cans will not be enough

b) approximately 42 students

c) \$27.45

d) Answers may vary. All bowls are filled with exactly 190 mL of soup.

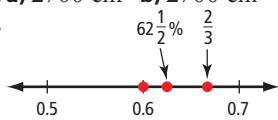
e) Answers may vary. The costs of purchasing plastic spoons, bowls, and serviettes.

13. and 14. Constructions will vary.

15. a) 24 cm^2 b) 12 cm^2

16. a) 2700 cm^2 b) 2700 cm^2

17.



18. a) $0.\overline{4}$ b) $0.\overline{27}$ c) $0.\overline{285714}$

19. a) $\frac{35}{100}$ b) $\frac{2}{10}$ c) $\frac{25}{1000}$

20. a) Electro-Zip: $\frac{15}{20}$, 75%; Ultraback: $\frac{7}{10}$, 70%;

A-Retrieve: $\frac{23}{30}$, 77%

b) A-Retrieve, fewer CD-ROMs are defective. A-Retrieve has the highest percent of CD-ROMs that passes the test for defects.

21. a) Maria. She sold 221 newspapers. b) Jeremy, 88%

22. a) Answers will vary. Blue is easiest to hit because it covers a wider single area than red or yellow.

b) blue: $\frac{9}{25}$, 36%; yellow: $\frac{12}{25}$, 48%; red: $\frac{4}{25}$, 16%

c) yellow, blue, red

Chapter 5

5.1 Probability, pages 163–164

3. a) $\frac{1}{4}$, 1:4, 25% b) $\frac{2}{5}$, 2:5, 40%

c) $\frac{0}{3}$, 0:3, 0% d) $\frac{6}{6}$, 6:6, 100%

4. a) 3 b) $\frac{2}{3}$, 2:3, 66.7%

5. a) $\frac{3}{8}$, 3:8, 37.5% b) $\frac{4}{8}$, 4:8, 50% c) $\frac{7}{8}$, 7:8, 87.5%

6. a) $\frac{3}{9}$, 3:9, 33.3% b) $\frac{1}{9}$, 1:9, 11.1% c) $\frac{7}{9}$, 7:9, 77.8%

7. a) $\frac{3}{5}$ or 60% b) $\frac{4}{5}$ or 80%

8. a) $\frac{7}{20}$, 0.35 b) $\frac{3}{20}$, 0.15

9. a) $\frac{1}{20}$, 0.05, or 5% b) $\frac{10}{20}$, 0.5, or 50% c) $\frac{4}{20}$, 0.2, or 20%

10. $\frac{3}{4}$

11. $\frac{5}{60}$ or 0.08 or $8\frac{1}{3}\%$. Answers may vary. There are

5 s between the 12 and 1. There are 60 s in 1 min.

12. Answers may vary. In order to be guaranteed of having at least 1 of each colour, you would have to select all the marbles.

5.2 Organize Outcomes, pages 169–170

4. a)-b)

		Spin		
		Tiger	Bear	Monkey
Tile Choice	Hungry	hungry, tiger	hungry, bear	hungry, monkey
	Sleepy	sleepy, tiger	sleepy, bear	sleepy, monkey
	Playful	playful, tiger	playful, bear	playful, monkey
	Angry	angry, tiger	angry, bear	angry, monkey

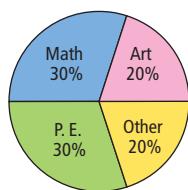
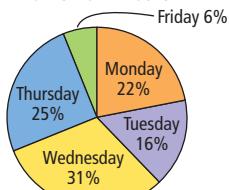
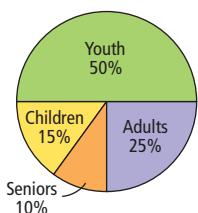
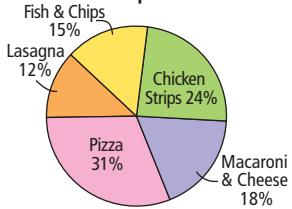
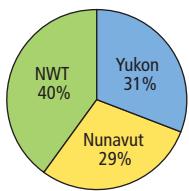
c) Yes. Choosing a tile has no affect on the spin.

5. a)-b)

		Card				
		Moon	Sun	Cloud	Star	Rainbow
Colour	Black (B)	B, Moon	B, Sun	B, Cloud	B, Star	B, Rainbow
	White (W)	W, Moon	W, Sun	W, Cloud	W, Star	W, Rainbow

6. a)-b)

Coin	Marble Colour	Outcome
Head	B Y R	(Head, B) (Head, Y) (Head, R)
Tail	B Y R	(Tail, B) (Tail, Y) (Tail, R)

6. Favourite School Subject**7. Homework Hours****8. Theatre Admissions****9. Lunch Specials****10. a) Territory Population**

b) Answers may vary depending on population figures found on Internet.

c) Answers may vary.

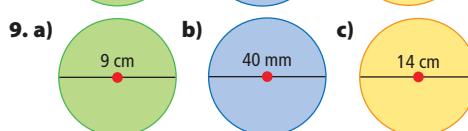
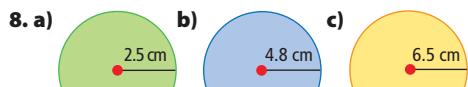
11. a)–e) Answers may vary.

12. a)–c) Answers may vary.

13. a)–d) Answers may vary.

Chapter 8 Review, pages 298–299

1. B
2. F
3. A
4. C
5. E
6. D
7. H



10. No, point B does not lie within the circle.

11. a) 33.9 cm **b)** 38.3 cm

12. a) 18.8 m **b)** 5.7 km **c)** 4.4 m **d)** 659.4 cm

13. 3.8 m

14. a) 20.6 m **b)** \$149.35

15. a) 1218.6 cm² **b)** 221.6 cm²

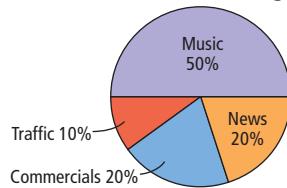
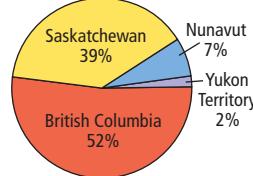
16. a) 52.8 m² **b)** 5.3 km² **c)** 193.5 m² **d)** 514.5 mm²

17. 50.2 m²

18. 69.1 cm²

19. 625

20. a) 12 **b)** 15% **c)** soccer and baseball

21. Radio Station Air Time Programming**22. a) First Nations Population**

b) Answers may vary. The southern provinces have warmer weather and easier access to more resources.

Chapters 5–8 Review, pages 304–306

1. a) $\frac{4}{8}$ or 4:8 or 50%

b) $\frac{2}{8}$ or 2:8 or 25%

c) $\frac{0}{8}$ or 0:8 or 0%

d) $\frac{8}{8}$ or 8:8 or 100%

	Spinner			
	1	2	3	4
Coin Toss	Heads (H)	H, 1	H, 2	H, 3
	Tails (T)	T, 1	T, 2	T, 3

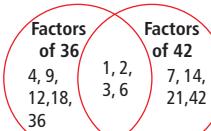
		Second Letter				
		a	e	i	o	u
First Letter	a	a, a	a, e	a, i	a, o	a, u
	e	e, a	e, e	e, i	e, o	e, u
	i	i, a	i, e	i, i	i, o	i, u
	o	o, a	o, e	o, i	o, o	o, u
	u	u, a	u, e	u, i	u, o	u, u

b) $\frac{1}{25}$ c) $\frac{2}{25}$ d) $\frac{9}{25}$

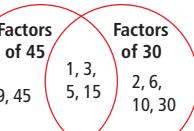
4. a) $\frac{4}{30}$ or 13.3% b) $\frac{1}{6}$ or 16.7%

c) Answers may vary. The experimental probability is less than the theoretical probability.

5. a)



b)



6. a) $\frac{3}{5}$ b) $\frac{14}{14} = 1$ c) $\frac{8}{8} = 1$ d) $\frac{2}{3}$

7. a) $\frac{2}{7}$ b) 0 c) $\frac{1}{2}$ d) $\frac{3}{5}$

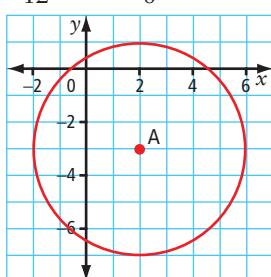
8. No, she needs another $\frac{1}{8}$ of a bag.

9. a) $\frac{1}{8}$ b) $\frac{1}{2}$ c) $4\frac{1}{10}$ d) $2\frac{3}{4}$

10. a) $\frac{7}{9}$ b) $\frac{9}{20}$ c) $3\frac{2}{3}$ d) $3\frac{1}{2}$ e) $1\frac{5}{12}$ f) $8\frac{3}{10}$

11. a) $1\frac{7}{12}$ trays b) $\frac{3}{8}$ of a tray c) $1\frac{23}{24}$ trays

12. a)



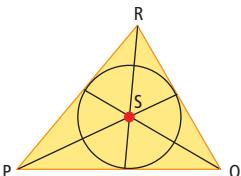
b) No

13. a) circumference: 27.0 cm; area: 58.1 cm^2

b) circumference: 32.0 cm; area: 81.7 cm^2

14. 188.4 cm

15. a)-c)



16. It is 4 times larger. For example, if $r = 5 \text{ cm}$, $A = 78.5 \text{ cm}^2$. If $r = 10 \text{ cm}$, $A = 314 \text{ cm}^2$. $314 \div 78.5 = 4$

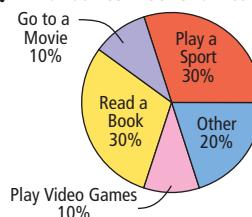
17. a) Scrimmage

b) Scrimmage, Technique, Warm Up; Scrimmage, Drills, Warm Up

c) Warm Up: 6 min; Drills: 15 min; Technique: 15 min; Scrimmage: 21 min; Cool Down: 3 min

Time	Activity
4:00 p.m.	Warm Up
4:06 p.m.	Drills
4:21 p.m.	Technique
4:36 p.m.	Scrimmage
4:57 p.m.	Cool Down
5:00 p.m.	Finish

18. Favourite Weekend Activities



Chapter 9

9.1 Explore Integer Addition, pages 313–315

5. a) $(+5) + (-5) = 0$

b) $(-6) + (+4) = -2$

c) $(-4) + (+8) = +4$

6. a) $(+6) + (-9) = -3$

b) $(-4) + (+4) = 0$

c) $(+7) + (-3) = +4$

7. a) $+7$ b) -6 c) $+3$ d) 0

8. a) -5 b) $+8$ c) -3 d) $+5$

9. a) \$6 left b) 2 cm below c) won by 3 goals

d) 12 m under the water

10. $-\$15$

11. -4°C

12. a) $(+6) + (+2) = +8$ b) $(-5) + (+8) = +3$

c) $(+4) + (-4) = 0$ d) $(+6) + (-2) = +4$

$(+2) + (+3) = +5$	$(+3) + (+2) = +5$
$(-1) + (-4) = -5$	$(-4) + (-1) = -5$
$(+2) + (-2) = 0$	$(-2) + (+2) = 0$
$(+4) + (-7) = -3$	$(-7) + (+4) = -3$

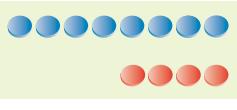
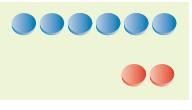
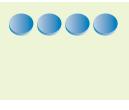
b) The order in which you add 2 integers does not change the sum.

14. a) 5 red chips = $+5$,

7 red chips + 2 blue chips = $(+7) + (-2) = +5$,

10 red chips + 5 blue chips = $(+10) + (-5) = +5$

b) Answers will vary. For example,



Chapters 9–12 Review, pages 458–460

1. a) $(+6) + (-4) = +2$

b) $(+4) + (-9) = -5$

2. a) $(+4) - (-2) = +6$

b) $(-1) - (-5) = +4$

3. a) 0 **b)** $+3$ **c)** -2 **d)** $+16$ **e)** -4 **f)** $+7$

4. $+9^\circ\text{C}$

5. 413 m deep

6. a) Add 3 to the preceding number starting at 1; 13, 16

b) Add 5 to the preceding number starting at 8; 31, 36

c) Subtract 3 from the preceding number starting at 17; 5, 2

7. a) The denominator of each fraction is 30. Add 3 to the numerator of the preceding fraction starting with the numerator of 2. Add 0.1 to the decimal equivalent of each fraction in the pattern starting with the decimal equivalent of $\frac{2}{30}$, which is 0.06̄.

b) $\frac{11}{30}$

c) $0.\overline{56}$

8. a)

Figure Number	Blue Tiles	White Tiles
1	6	3
2	12	6
3	18	9
4	24	12
5	30	15

b) The number of blue tiles is twice the number of white tiles.

c) Let w represent the number of white tiles: $2w$

d) 48

9. a) 28

b)

Figure Number, n	Perimeter
1	6
2	8
3	10
4	12
5	14
6	16

10. a)

Number of Cars, x	Number of Riders, y
1	4
2	8
3	12
4	16
5	20

b) $4x$

c) Answers may vary. The points lie in a straight line. The y -values are four times the x -values.

d) 40 riders

11. a) $2x - 4, 2$

b) $2x - 4 = 2$

12. a) $k = 26$ **b)** $p = 0$ **c)** $n = 9$ **d)** $c = 24$

13. a) $3x + 2 = 11, x = 3$

b) $2x + 3 = 7, x = 2$

14. 16 cm

15. a) C represents the cost for one day; n represents the number of students

b) 25 students

16. a) 25 **b)** 26 **c)** 28

17. $x = 6, y$ is a whole number that cannot equal 4. Or, $y = 6, x$ is a whole number that cannot equal 4.

18. a) 32 min

b) 28 min

c) Answers may vary. For example, the weather was too stormy for a longer walk.

d) 6 min

19. 243 points

20. 69.2%

21. a) \$3.99

b) median: \$3.49, mean: \$4.11

c) Answers may vary. Median.

d) Answers may vary. \$6.98. Yes. The price is double the others. The orange juice container may be larger than the other containers.

e) median: \$3.39, mean: \$3.39

22. Answers may vary. The mode would advertise the effectiveness of the new chemical to destroy 99% of cockroaches.