

Blackline Masters Answers

CHAPTER 1 Applying Number Sense

Get Ready 1, pages 2 and 3

- a) 140 b) 290 c) 343
d) 489 e) 120 f) 320
- a) 42 b) 257 c) 639
d) 1799 e) 98 f) 2017
- a) 599 b) 138 c) 80
d) 109 e) 40 f) 299
- a) 50 b) 450 c) 1850
d) 1940 e) 2390 f) 9.5
- a) 1.9 b) 2 c) 2.6
d) 10.8 e) 17.6 f) 16.7

Get Ready 2, pages 2 and 3

- a) 27 283.63 b) 27 283.6 c) 27 284
d) 27 280 e) 27 300 f) 27 000
- a) 17 000 b) 74 c) 0.85
d) 205 480 e) 439.6 f) 2.399
- a) 0, 1, 2, 3, 4 b) 5, 6, 7, 8, 9 c) 5, 6, 7, 8, 9
d) 0, 1, 2, 3, 4
- a) \$54.61 b) \$0.67 c) \$8.20
d) \$16.06
- a) 949 000 km b) 1920 km c) 5.0 m
d) 3954 m
- a) 5700 g b) 79.9 kg

Get Ready 3, pages 2 and 3

- a) 5900 g b) 4.879 g c) 37 800 g
d) 0.662 g
- a) 0.068 kg b) 5.532 kg
c) 0.0285 kg d) 4.21 kg
- a) 5.678 km b) 3.556 km
c) 28.743 km d) 0.372 km
- a) 3560 cm b) 285.4 cm c) 16 500 cm
d) 45 590 cm
- a) 720 s b) 10 800 s c) 8100 s
d) 129 600 s e) 1680 s
- a) 5.436 L b) 0.9 L c) 1200 L
- a) 25 000 g b) 98 mm c) 10.25 L
d) 5.5 kg e) 6410 mL f) 5390 cm

Get Ready 4, pages 2 and 3

- a) 26 b) 10
- a) 16 b) 18 c) 28 d) 39 e) 39

1.1 Connecting Perimeter With Whole Number and Decimals, pages 4 and 9

- a) 20.4 b) 215.22 c) 29
d) 275.205 e) 50.73 f) 22.3
- a) 113.6 cm b) 31.7 cm
- a) 52.8 cm b) 36.4 m
- a) EF = 7.5 m, AF = 6.9 m, perimeter = 58.2 m
b) UT = TS = SR = 1.6 cm,
UV = 4.9 cm, perimeter = 28.4 cm
- a) 29.4 m b) \$208.74

1.2 Estimation, pages 10–15

- a) 7612 b) 0 c) 38
- a) 2880 b) 40 990 c) 140
- a) 0.69 b) 15.07 c) 260.0
- a) \$319 b) 16 m c) 108 g
- a) 85.4 L b) 2.7 cm c) 981.0 g
- a) 5400 s b) 900 g c) 100 km
- a) B b) C c) D
d) A
- a) C b) D c) E
d) A e) B

1.3 Exponents and the Order of Operations, pages 16–21

- a) 2^7 b) 10^3 c) 3^9
- a) 4 b) 100 c) 11
- a) 512 b) 161 051 c) 2.8561
- a) Multiply by $5 \cdot 5^n$.
b) Multiply by $2 \cdot 2^n$.
- a) 17 b) 7 c) 9
- a) $11.3 + (12 - 2) \times 6$
b) $(19 - 7) \times 3 \div 2$
c) $6 \times 7 \div (11.4 - 10.4)$
- a) Z b) X c) Y

1.4 Working With Area and Other Formulas, pages 22–27

- a) 30 b) 0.5 c) 2160
d) 367.6
- a) 36.75 cm^2 b) 13.5 cm^2
- a) 71.2 km/h b) 50.7 km/h
- a) \$285 b) \$197 c) \$257.50

Review, pages 28 and 29

- a) 222 cm b) 103.0 cm c) 67 m
- a) \$30 b) \$28.58
- a) 5^4 b) 3^6
- a) 10 b) 0.5
- 10.61
- a) 8 b) 64
- a) \$225 b) \$235

Practice Test, pages 30 and 31

- C
- A
- B
- D
- C
- Look at the hundredth's digit. If it is 5 or more, add 1 to the digit in the tenth's position. If it is less than 5, leave the digit in the tenth's place unchanged.
- a) exponent b) value of the power c) base
- Answers may vary. For example, measure the length of one of my strides. Count off the length of the backyard in strides and the width of the backyard in strides. Use the length of my stride to estimate the length and width of my backyard. Then, find the product of the length and width to find the area. Another example could be to take a sheet of paper that is 1 m by 1 m. Find the number of times the sheet of paper can be laid over the backyard with no gaps and no overlaps. This would be the area of the backyard in square metres.
- circumference 77.9 cm, area 483.1 cm^2
- a) \$442.50 b) 300 items

Blackline Masters Answers

CHAPTER 2 Perimeter and Area Relationships

Get Ready 1

- a) 3 b) 21 c) 8
d) 15 e) 32 f) 2
- a) 18, 6, 3, 12, 27, 0, 30, 90
b) 5, 9, 17, 45, 11, 29.8, 38.2
c) 5, 2, 2.9, 23, 8, 17.6, 20.9
d) 3, 3, 5, 4, 3
- a) 12 b) 5 c) 126
d) 50 e) 8 f) 36
- 220, 370, 270, 315

Get Ready 2

- a) 1 b) 3 c) 2 d) 6
- a) 6 b) 3 c) 3 d) 2
- a) 15 b) 7 c) 14
d) -1 e) 7
- a) 18 b) 6 c) 14
d) -3 e) 7
- a) 4 b) 11.8 c) 5.5
d) 11 e) 5.5

Get Ready 3

- a) 34 m b) 12.8 cm c) 128 mm
- a) 30 m b) 21.7 cm c) 16.8 cm
- a) 64.8 m b) 31.8 m c) 44 mm

Get Ready 4

- a) 144 cm^2 b) 10.24 cm^2 c) 720 cm^2
d) 25.5 cm^2
- a) 8.06 cm^2 b) 100.1 cm^2 c) 990 mm^2
d) 62.4 m^2

2.1 The Pythagorean Theorem

- a) p b) v
- a) 15 m b) 4.1 cm
- a) 9.4 cm b) 10.3 cm
- 80 m
- Divide the rope into 12 units of equal length. Form a triangle with sides 3 units, 4 units, and 5 units. This is a right triangle.

2.2 Perimeter and Area of Right Triangles

- a) 30 cm b) 68.1 m
- a) 9.6 m b) 36 m^2
- a) perimeter 12.7 m, area 5.3 m^2
b) perimeter 205 cm, area 1800 cm^2
- a) 8 m b) 36 m^2

2.4 Perimeter and Area of Composite Figures

- a) $a = 23 \text{ m}$, $b = 14 \text{ m}$, perimeter 124 m
b) $a = 6 \text{ m}$, perimeter 64 m
- rectangles, area 210 m^2
- a) area 89.5 m^2 , perimeter 41.7 m
b) area 335.6 cm^2 , perimeter 67.1 cm

2.5 Maximizing the Area of a Rectangle

- a) 15 m by 15 m b) 32 m by 32 m
- $15\,625 \text{ cm}^2$
- a) 36 m^2 b) 117 m^2
- a) rectangle 12 m by 6 m b) 36 m^2

Review, pages 72 and 73

1. a) 8 cm b) 8.0 cm
2. 3.2 m
3. a) 27.3 m b) 32 m²
4. 49.8 m, 160 m²
5. a) 26 m by 26 m b) 52 m by 26 m
 c) 676 m²

Practice Test

1. D
2. B
3. A
4. C
5. D
6. a) The figure is composed of a square and two semicircles or one whole circle. Find the area of the square and the area of the circle, and add the areas together.
 b) 56 cm²
7. a) The maximum area of a shape with a given perimeter is a square with side lengths one quarter the given perimeter. If the given perimeter is 400 cm, then the corkboard would be a square with side length 100 cm.
 b) 10 000 cm²

Blackline Master Answers

CHAPTER 3 Surface Area and Volume Relationships

Get Ready 1

- a) 28 cm b) 50 m c) 7.1 m d) 3.9 cm
- a) 44 cm b) 66 cm c) 22 m
- a) 79 m^2 b) 201 mm^2
- 88 cm^2

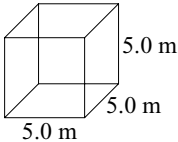
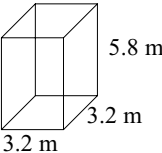
Get Ready 2

- d) 5 e) 22 f) 26
- a) 24 b) 85 c) 2 d) 10
- a) 418.2 b) 1440 c) 37.0
d) 1 e) 0

Get Ready 3

- a) 10 m b) 24 cm c) 9 km
- a) 8.5 m b) 1.8 m c) 2 m
- a) 7.2 m b) 5.8 m c) 5.5 cm

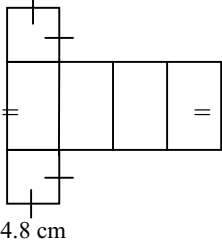
3.1 Volume: Prisms and Cylinders

- a) $22\,000 \text{ cm}^3$ b) 110 cm^3
- a)  5.0 m b) 125 m^3
- a) 1610 cm^3 b) 20 m^3
- a)  5.8 m b) 59 m^3

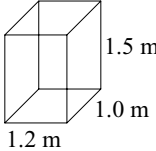
3.2 Volume: Cones and Spheres

- a) 22 m^3 b) $39\,000 \text{ cm}^3$
- a) $14\,000 \text{ m}^3$ b) $17\,000 \text{ cm}^3$
- 4450 cm^3
- 42 m^3
- No. The volumes are not the same because $(2.0)^2(1.5)$ is not the same as $(1.5)^2(2.0)$.

3.3 Surface Area: Rectangular Prisms

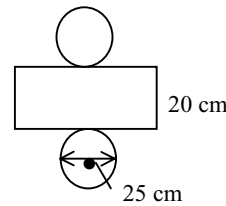
- a)  5.6 cm b) 154 cm^2

- a) 9.7 m^2 b) 140 cm^2

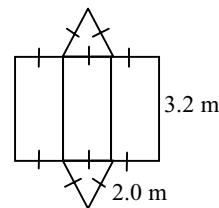
- a)  1.5 m b) 7.8 m^2 c) 3 sheets

3.4 Surface Area: Cylinders and Prisms

- 610 cm^2
- a) Answers may vary. b) 2600 cm^2



- 530 cm^2
- a) Answers may vary. b) 22.4 m^2



3.5 Minimizing Surface Area

- a) 8 cm by 8 cm by 8 cm
b) Since a cube minimizes surface area, $s^3 = 512$ and $s = \sqrt[3]{512} = 8$

2. Make height equal diameter and solve

$$800 = \pi \left(\frac{d}{2} \right)^2 d$$

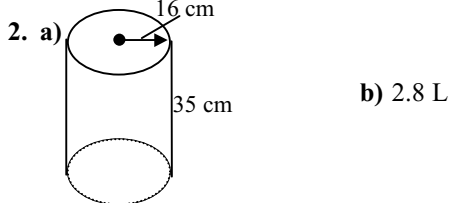
The vase would have diameter 10 cm and height 10 cm.

3. a) 7 cm by 7 cm by 7 cm b) 294 cm²

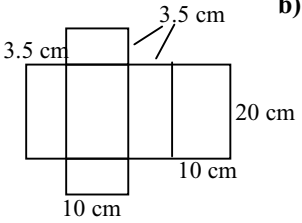
4. a) $d = 8.6$ cm, $h = 8.6$ cm b) 290 cm²

Chapter Review

1. a) 700 cm³



3. 1800 cm³

4. a)  b) 610 cm²

5. 830 cm²

6. a) 30 cm by 30 cm by 30 cm b) 5400 cm²

Practice Test

1. B 2. D 3. A 4. B 5. A 6. C

7. a) 5 cm by 5 cm by 5 cm b) 150 cm²

Cumulative Review, Chapters 1–3

1. a) 3.5 m b) 3 kg c) 34 200 d) 35

2. a) 5⁰, 5¹, 5², 5³, 5⁴, 5⁵ b) 3⁰, 3⁻¹, 3⁻², 3⁻³, 3⁻⁴

3. a) 14.0 cm b) 10.2 cm c) 15.8 cm

4. a) 20 m² b) 204 cm²

5. 100 m²

6. 3.8 km

7. a) 45 cm³ b) 1500 m³ c) 1200 m³

8. a) 23 m³ b) 5 h

9. 360 cm²

Blackline Masters Answers

CHAPTER 4 Analysing Relationships With Data

Get Ready 1

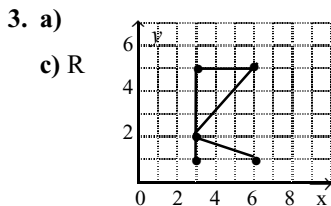
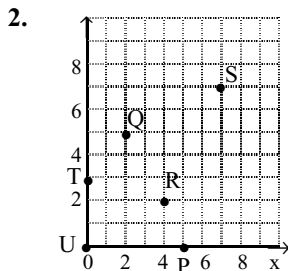
- a) 45% b) 50% c) 0.4% d) 59.6%
- a) 70% b) 80% c) 74% d) 50%
- a) 67.5% b) 87.5% c) 55.6% d) 8.3%
- a) $0.72, \frac{18}{25}$ b) $0.28, \frac{7}{25}$ c) $0.0125, \frac{1}{80}$
- a) 27% b) 20% c) 1% d) 0.1%
- a) 72 g b) 288 m c) \$0.27 d) \$1.13

Get Ready 2

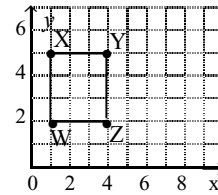
- a) i) rent ii) savings b) \$425
- a) 1 – 2 b) 80 c) 11 – 4
- a) pictograph
 - clothes dryer and clothes washer or clothes dryer and dishwasher
 - 3.5 years longer

Get Ready 3

- A(2, 2), B(5, 5), C(7, 0), D(0, 7), E(9, 9), F(3, 9), G(9, 6), H(0, 0), J(8, 3)



4. a)



b) Z(4, 2) c) P = 12 units, A = 9 square units

4.1 Formulating Hypotheses and Gathering Data

- a) primary b) secondary c) primary
 - secondary e) primary f) secondary
- a) secondary for convenience
 - primary for very specific data
 - secondary for convenience and information already gathered by farmers and government
 - primary for very specific data
- a) Answers will vary.

b)

| Source of Music | Frequency |
|-----------------|-----------|
| AM Radio | 4 |
| CDs | 10 |
| FM Radio | 6 |
| Records | 2 |
| Tapes | 3 |

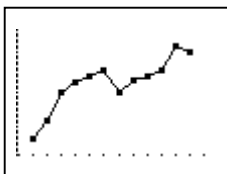
- CDs, FM Radio, AM Radio, Tapes, Records
- non-random sampling e) 360

4.2 Surveys and Sampling Principles

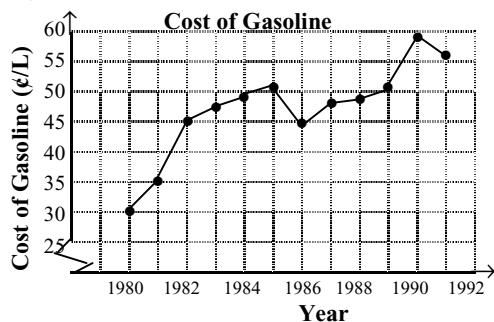
- a) non-random sampling
 - stratified random sampling
 - non-random sampling
 - non-random sampling
- a) students b) all people
- 5. Answers will vary.

4.3 Organizing Data Using the TI-83 Graphing Calculator

1. b)

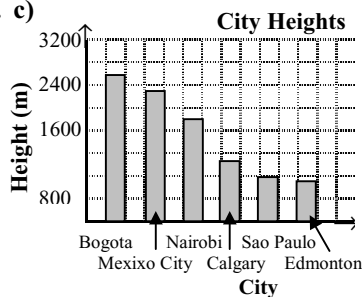


c)



d) Answers will vary.

2. c)



d) Answers will vary.

4.4 Measures of Central Tendency

1. a) mean 15.583, median 15, mode 15, outlier 45

b) mean 7.5, median 6, mode 6, outlier 25

2. a) mean 10.625 g, median 10.5 g, mode 6 g

b) mean 29.7 kg, median 20.5 kg, mode 14 kg

3. a) mean b) mode c) mode

4. a) mean 80, median 80, mode 78 b) mean

5. a) mean \$45 000, median \$40 000, mode \$40 000

b) President at \$100 000 c) median

4.5 Data Analysis: Trends and Relationships

1. a) independent: Body Length (excluding tail);
dependent: Tail Length

b) A c) E d) No.

2. a) Yes. As variable 1 increases, variable 2 increases.

b) No.

c) Yes. As variable 1 increases, variable 2 decreases, except for the one outlier.

Chapter 4 Review

1. a) secondary b) primary

2. a) Secondary since this information is available from government sources.

b) Primary since you would survey the children in the daycare centre.

3. all students; answers will vary.

4. a) number of CDs owned, bar graph

b) number of hours of sunshine each day, broken line graph

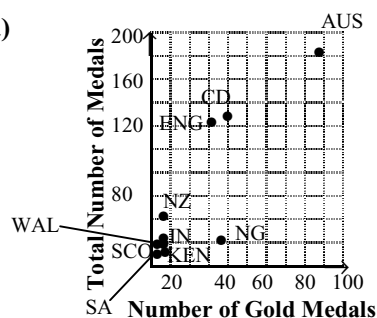
5. Answers will vary.

6. a) mean 159, median 177.5, mode: 73 b) bar graph

7. a) mean \$194 667, median \$80 000, mode \$70 000

b) median. It is not affected by the higher salaries.

8. a)



b) As the number of medals won increases, the number of gold medals won increases.

9. Answers will vary.

Chapter 4 Practice Test

1. B

2. C

3. D

4. a) primary b) secondary c) primary

5. a) systematic random sampling

b) non-random sampling

c) stratified random sampling

6. a) mean 25.9 km, median 27 km, mode none

b) mean

Blackline Masters Answers

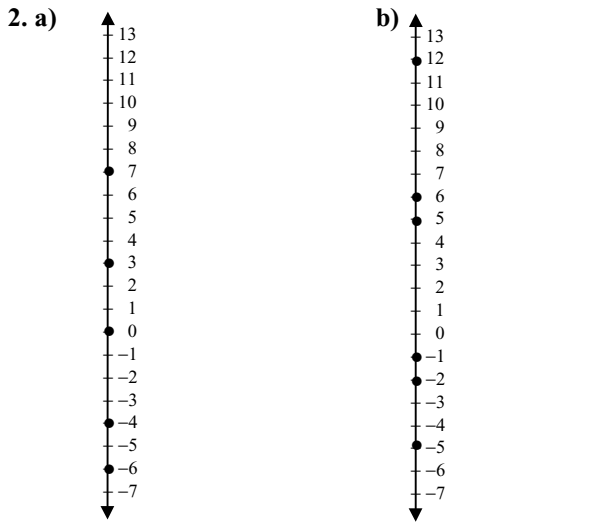
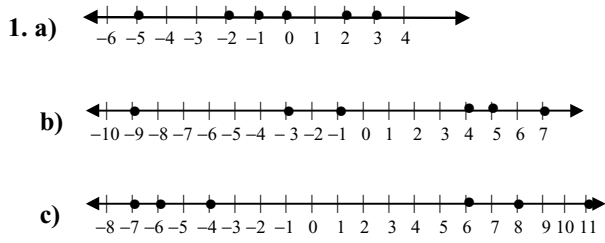
CHAPTER 5 Exploring Integers and Rational Numbers

Get Ready 1

1. a) 4 b) -6 c) 1
 d) 0 e) -4 f) 2

2.-3. Answers will vary.

Get Ready 2

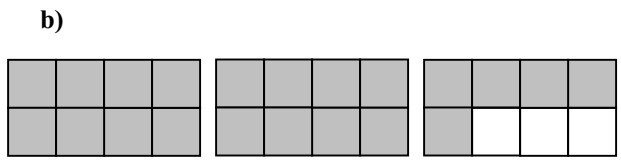
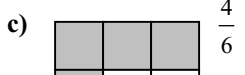
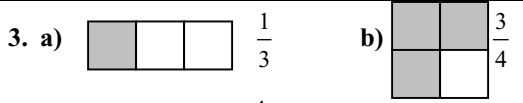


Get Ready 3

1. a) 7 b) 8 c) 22 d) 10
 2. a) 2 b) 7 c) 10.6 d) 12
 3. a) 28 b) 3 c) 35 d) 8
 4. a) 12 b) 21 c) 116 d) 113

Get Ready 4

1. a) $\frac{2}{3}$ b) $\frac{3}{4}$ c) $\frac{3}{4}$ d) $\frac{2}{3}$
 2. a) $\frac{10}{4}$ or $\frac{5}{2}$, $2\frac{1}{2}$ b) $\frac{13}{8}$, $1\frac{5}{8}$ c) $\frac{15}{4}$, $3\frac{3}{4}$



Get Ready 5

1. 15
 2. 6
 3. 10
 4. 30
 5. 20
 6. 30

Get Ready 6

1. a) 20 b) 12 c) 16
 2. a) $\frac{10}{15}$, $\frac{3}{15}$ b) $\frac{2}{12}$, $\frac{9}{12}$ c) $\frac{1}{12}$, $\frac{10}{12}$
 3. a) $\frac{5}{15} + \frac{12}{15} = \frac{17}{15}$ or $1\frac{2}{15}$ b) $\frac{10}{18} + \frac{1}{18} = \frac{11}{18}$
 c) $\frac{5}{20} + \frac{14}{20} = \frac{19}{20}$
 4. a) $\frac{8}{10} - \frac{7}{10} = \frac{1}{10}$ b) $\frac{5}{8} - \frac{4}{8} = \frac{1}{8}$
 c) $\frac{10}{12} - \frac{5}{12} = \frac{5}{12}$
 5. a) $\frac{5}{6}$ b) $\frac{1}{8}$ c) $\frac{2}{3}$

Get Ready 7

1. $\frac{53}{100}$

2. $\frac{2}{5}$

3. $\frac{3}{5}$

4. $\frac{11}{50}$

5. $\frac{17}{50}$

6. $\frac{9}{500}$

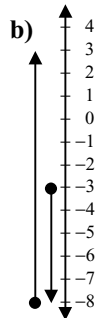
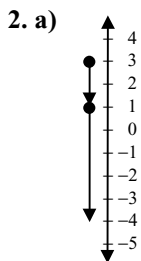
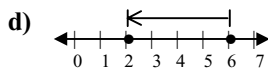
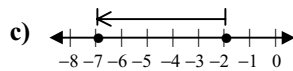
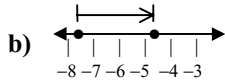
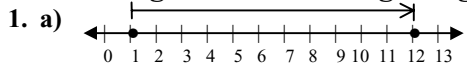
7. $\frac{17}{20}$

8. $\frac{1}{250}$

9. $\frac{9}{25}$

10. $\frac{1}{8}$

5.1 Adding and Subtracting Integers



3. a) -6 b) 9 c) 4 d) -7

4. a) 4 b) -4 c) -7 d) 4

5. a) -1 b) -3 c) -11

6. a) 3 b) -15 c) 11 d) -7

7. \$15

8. -1°C

5.2 Multiplying and Dividing Integers

1. a) $3 + 3 + 3 + 3 + 3 = 15$

b) $(-3) + (-3) + (-3) + (-3) = -12$

c) $(-2) + (-2) + (-2) = -6$

2. a) -10 b) 12 c) 21

3. a) $-18 \div (-3) = 6$, $-18 \div 6 = -3$

b) $6 \div (-2) = -3$, $6 \div (-3) = -2$

c) $-28 \div (-14) = 2$, $-28 \div 2 = -14$

4. a) 4 b) -11 c) 6 d) -13

5. a) 7 b) 5 c) -72 d) 0

6. $-9 \div 3$

7. $-50 \div 5$

8. -9°C

5.3 Plotting Points on the Cartesian Plane

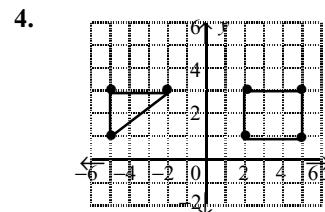
2. a) First b) Fourth c) Fourth

d) y -axis e) x -axis f) x -axis

g) y -axis h) Second i) Second

j) Second k) Third l) Third

3. A(3, 2), B(-2, 2), C(0, 4), D(0, 0), E(-5, -3), F(5, 0), G(-4, 0), H(4, -4), I(-3, -4), J(0, -2)



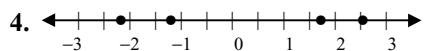
a) rectangle b) triangle

5.4 Exploring Rational Numbers

1. a) 2.6 b) -1.75 c) 4.125 d) -3.7

2. a) $\frac{3}{5}$ b) $-1\frac{4}{5}$ c) $1\frac{3}{10}$ d) $-\frac{1}{8}$

3. a) $\frac{11}{6}$ b) $-\frac{23}{8}$ c) $\frac{25}{7}$ d) $-\frac{27}{5}$



5. a) = b) > c) > d) >

6. Answers will vary.

7. a) smallest: $\frac{1}{4}$, largest: $\frac{1}{2}$

b) smallest: 0.038, largest: 0.83

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

5.5 Operations With Rational Numbers

1. a) $-\frac{5}{18}$ b) $-\frac{7}{10}$ c) $-21\frac{1}{4}$

2. a) 8 b) 4 c) $-1\frac{1}{2}$

3. a) $-\frac{1}{24}$ b) $-\frac{5}{6}$ c) 3

4. a) 0 b) $1\frac{3}{10}$ c) $-\frac{1}{10}$

5. a) -0.16 b) -1.3 c) -3.276

d) 12 e) -3

6. 0.4 km/h

5.6 Ratio and Rate

1. a) 1:1 b) 2:3 c) 1:4 d) 3:8

2. a) 1:2 b) 7:1 c) 4:1

3. a) 4 b) 100 c) 10
d) 18 e) 6

4. a) \$48/day b) \$2.50/tape c) \$3/day

5. a) \$0.0051/g, \$0.0060/g;
Better value: 350 g for \$1.80

b) \$0.0042/mL, \$0.0045/mL;
Better value: 900 mL for \$3.79

c) \$0.2983/pkg, \$0.3225/pkg; Better value:
6 packages for \$1.79

Chapter 5 Review

1. $25 + 35 + (-20) + (-15)$

2. a) 5 b) -1 c) -9 d) 20

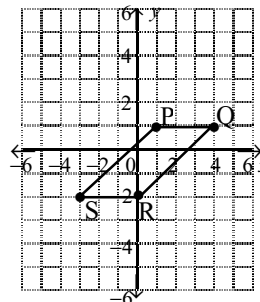
3. 57°C

4. a) -33 b) 30 c) -60 d) 2
e) -5 f) -5

5. 2°C/h

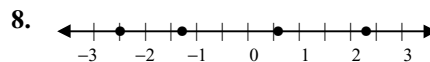
6. -9°C

7. a)



b) P: First; Q: First; R: y-axis; S: Third

d) 9 square units



9. a) $\frac{11}{48}$ b) $4\frac{1}{10}$ c) $2\frac{11}{24}$ d) $5\frac{1}{2}$

10. $40 + 4 \text{ corners} = 44$

11. \$7/h

12. 1920 km

13. 65

Chapter 5 Practice Test

1. A

2. B

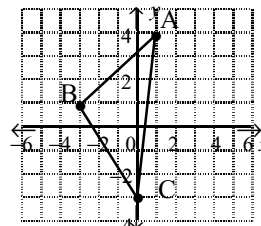
3. D

4. D

5. A

6. A

7. a)



c) 12.5 square units

8. a) $\frac{7}{12}$ b) $2\frac{2}{3}$ c) $3\frac{1}{20}$ d) 12

9. 60 km/h

10. 17.5 cm

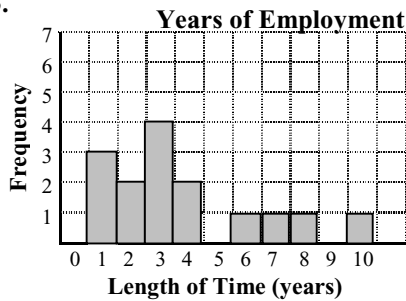
Cumulative Review, Chapters 4 and 5

1. a) primary b) secondary c) primary

2. a) systematic random sampling

b) stratified random sampling

3.

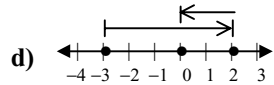
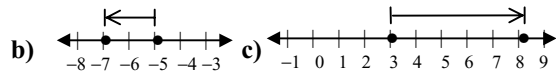
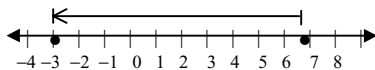


4. a) 3.2 kg b) 3.0 kg c) 3.0 kg

5. mode

6. As the independent variable increases, the dependent variable decreases.

7. a)



8. a) -28 b) -47 c) -28

d) 36 e) 10 f) 3

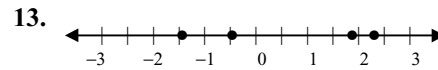
9. See student work.

10. A(0, 4), B(-4, 1), C(4, 4), D(3, 0), E(-3, -2), F(4, -4)

11. a) $\frac{1}{5}$ b) $-2\frac{3}{4}$ c) $\frac{1}{8}$

12. a) 0.7 b) 3.4 c) -2.3

d) $2.8\dot{3}$ e) $-0.91\dot{6}$



14. a) $\frac{15}{28}$ b) -1 c) 4

d) $\frac{5}{6}$ e) $-\frac{11}{28}$ f) $1\frac{1}{2}$

g) $-\frac{1}{2}$ h) $1\frac{3}{20}$

15. a) 12 b) 10

Blackline Master Answers

CHAPTER 6 Linear and Non-Linear Relations

Get Ready 1

- a) 75 km/h b) 1.5 m/min c) 0.1 km/s
- a) 3 students per computer b) 35 g per bag
c) 80 km/h d) \$6.50/h
- a) \$12 per ticket b) \$36
- a) \$90 per night b) \$720
- a) $83.\bar{3}$ km/h b) 291.7 km

Get Ready 2

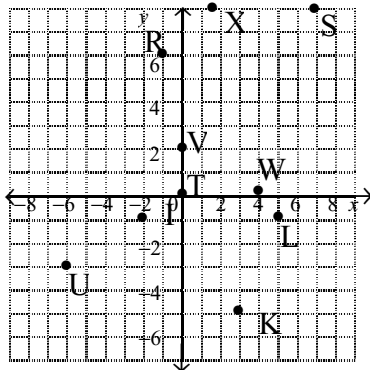
- $5\frac{7}{8}$ 2. 15 3. 10 4. $9\frac{1}{2}$
- 4 6. -1 7. -15 8. 3

Get Ready 3

- a) 6 b) 16 c) 29 d) 45
- a) 12 b) 14 c) 10 d) 4
- a) 14 b) -9 c) 13 d) -24
- a) 7 b) -10 c) 4.5 d) -2

Get Ready 4

- A(0, 4), B(4, 2), C(-5, 2), D(-4, -4), E(8, 0), F(5, -3), G(-8, -5), H(-4, 6), J(2, -6), K(7, 6)
- M(4, 4), N(4, -3), P(-1, -3), Q(-1, 4)
-



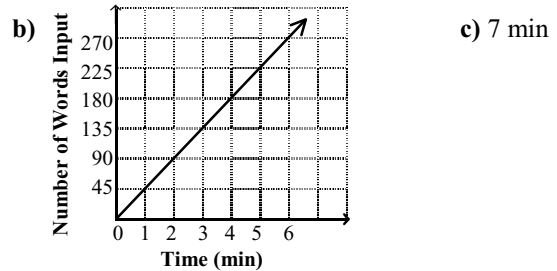
- a) M, A, T, H b) I, S c) F, U, N

6.1 Direct Variation

- a) $E = kt$ b) $C = kN$
- a) 1.5 b) 2

3. a)

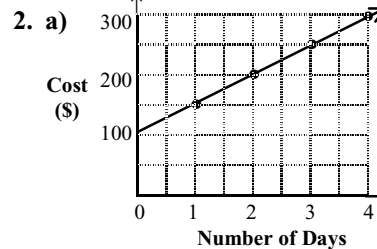
| Time (min) | Number of Words Input |
|------------|-----------------------|
| 1 | 45 |
| 2 | 90 |
| 3 | 135 |
| 4 | 180 |
| 5 | 225 |



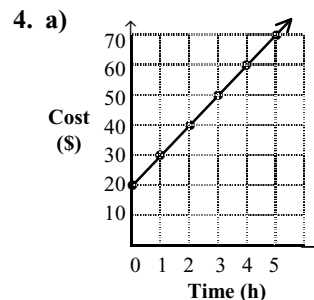
- a) 9; Marylyn's hourly rate of pay is \$9
b) $w = 9t$ c) \$72

6.2 Partial Variation

- a) partial b) direct c) direct d) partial

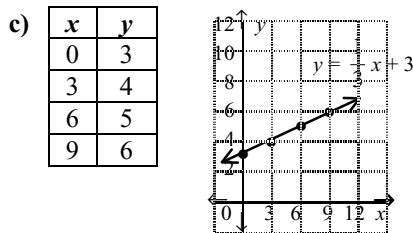
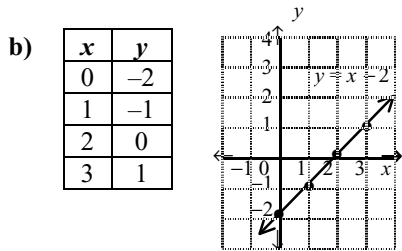
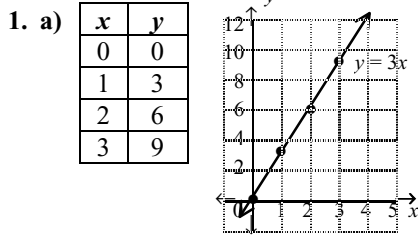


- a) \$450 c) 6 days
d) fixed cost \$100, variable cost \$50 per day
e) line shifts upward by \$50
- a) fixed: 3, variable: $0.5k$ b) \$8
c) 20 km. Set $C = 13$ and solve for k .



- a) $C = 10h + 20$ c) partial d) \$90

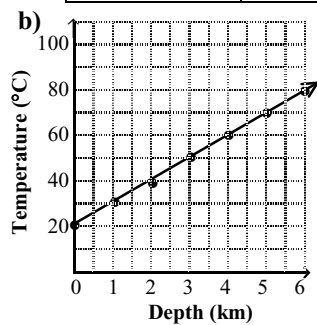
6.3 Graphing Linear Relations



2. b) (2, 5), (1, 2), (-1, -4)

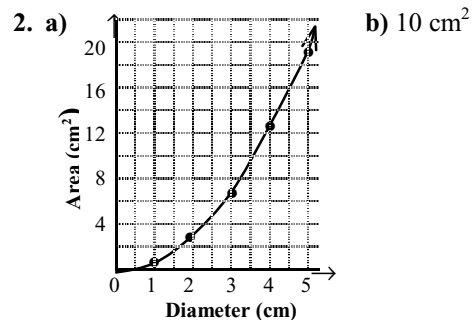
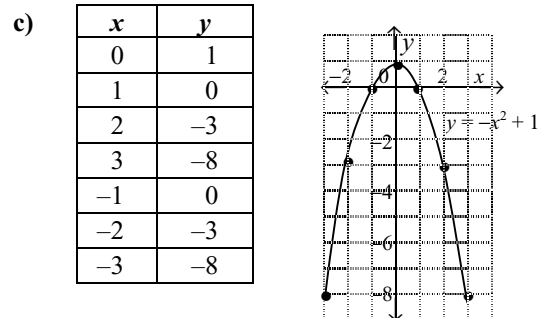
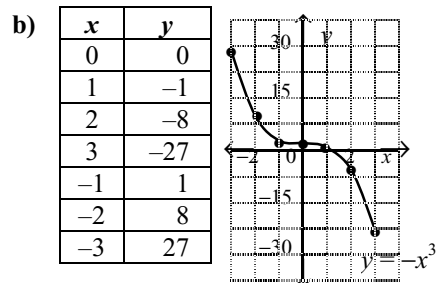
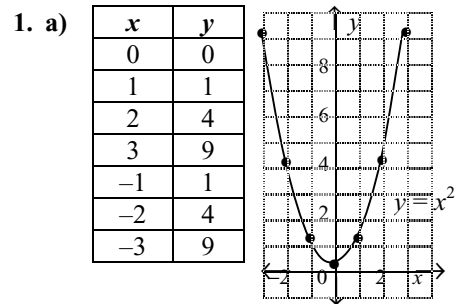
3. a)

| Depth (km) | Temperature (°C) |
|------------|------------------|
| 0 | 20 |
| 1 | 30 |
| 2 | 40 |
| 3 | 50 |
| 4 | 60 |
| 5 | 70 |
| 6 | 80 |



c) 90°C

6.4 Graphing Non-Linear Relations



6.5 First Differences

1. a) linear

| x | y | First Differences |
|---|----|-------------------|
| 1 | -1 | |
| 2 | -3 | -2 |
| 3 | -5 | -2 |
| 4 | -7 | -2 |
| 5 | -9 | -2 |

b) non-linear

| x | y | First Differences |
|-----|-----|-------------------|
| -1 | -3 | |
| -2 | -6 | -3 |
| -3 | -11 | -5 |
| -4 | -18 | -7 |
| -5 | -27 | -9 |

2. a) i) Answers will vary.

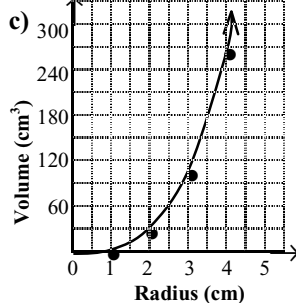
ii) linear

b) i) Answers will vary.

ii) non-linear

3. a) 4, 30, 79, 156

b) non-linear



d) 65 cm^3

6.6 Characteristics of Linear and Non-Linear Relations

1. a) linear b) non-linear

c) linear d) non-linear

2. a) non-linear b) linear

c) linear d) non-linear

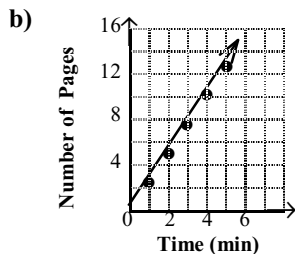
3. a) linear b) non-linear

c) non-linear d) non-linear

Chapter 6 Review

1. a)

| Time (min) | Number of Pages |
|------------|-----------------|
| 1 | 2.5 |
| 2 | 5.0 |
| 3 | 7.5 |
| 4 | 10.0 |
| 5 | 12.5 |



c) 22 min

d) He reads at a constant speed of 2.5 pages per minute.

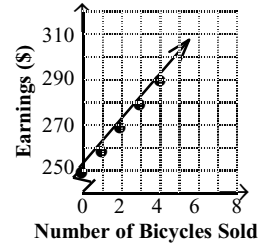
2. a)

| Number of Bicycles | Weekly Earnings (\$) |
|--------------------|----------------------|
| 0 | 250 |
| 1 | 260 |
| 2 | 270 |
| 3 | 280 |
| 4 | 290 |

b) $E = 10N + 250$

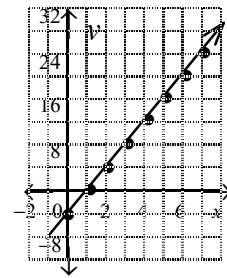
c) 25

d) \$350



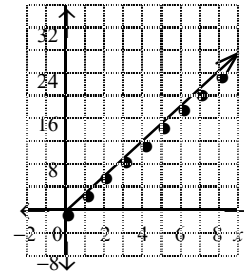
3. a)

| x | y |
|-----|-----|
| 0 | -2 |
| 1 | 2 |
| 2 | 6 |
| 3 | 10 |
| 4 | 14 |
| 5 | 18 |
| 6 | 22 |
| 7 | 26 |



b)

| x | y |
|-----|-----|
| 0 | 1 |
| 1 | 4 |
| 2 | 7 |
| 3 | 10 |
| 4 | 13 |
| 5 | 16 |
| 6 | 19 |
| 7 | 22 |
| 8 | 25 |



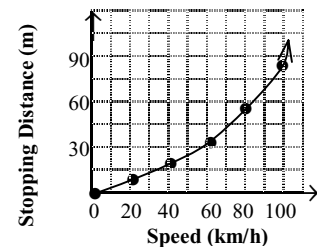
4. a)

b) non-linear

curve

c) 45 m

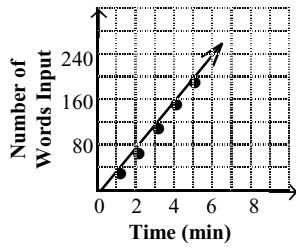
d) 110 km/h



5. a)

| Time (min) | Number of Words | First Differences |
|------------|-----------------|-------------------|
| 1 | 40 | |
| 2 | 80 | 40 |
| 3 | 120 | 40 |
| 4 | 160 | 40 |
| 5 | 200 | 40 |

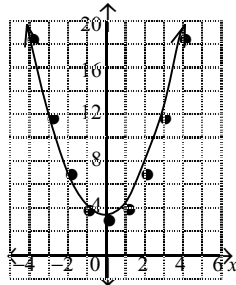
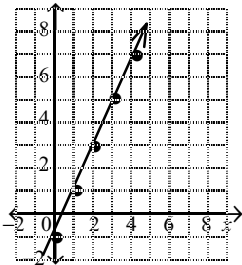
- b) linear c)
d) 8 min



6. a) linear b) non-linear
7. a) linear b) non-linear
c) linear d) non-linear

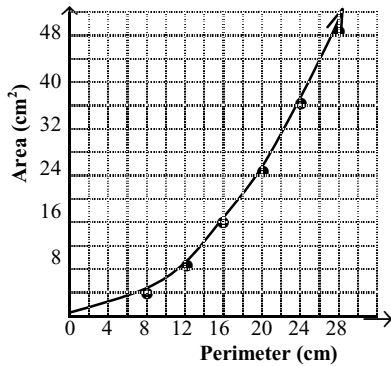
Chapter 6 Practice Test

1. B 2. C 3. B
4. B 5. C 6. A
7. a) linear b) non-linear



6.4 Discover Master

1. a) 4 b) 1
2. a) 8 b) 4 c) 8, 4
3. Answers will vary.
4. Answers will vary.

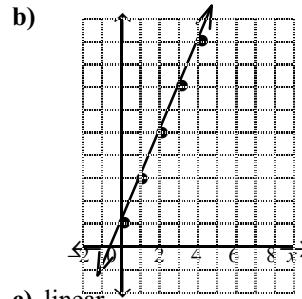


5. Answers will vary.

6.5 Discover Master

1. a)

| x | $y = 2x + 1$ |
|-----|--------------|
| 0 | 1 |
| 1 | 3 |
| 2 | 5 |
| 3 | 7 |
| 4 | 9 |



- c) linear

| x | $y = x^2 + 3$ | Change in y |
|-----|---------------|---------------|
| 3 | 11 | |
| 2 | 6 | -5 |
| 1 | 3 | -3 |
| 0 | 2 | -1 |
| -1 | 3 | 1 |
| -2 | 6 | 3 |
| -3 | 11 | 5 |

2. a)

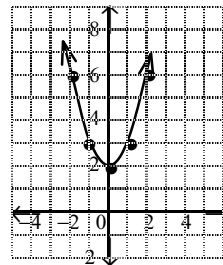
| x | y | Change in y |
|-----|-----|---------------|
| 0 | 1 | |
| 1 | 3 | 2 |
| 2 | 5 | 2 |
| 3 | 7 | 2 |
| 4 | 9 | 2 |

- b) the same

3. a)

| x | $y = x^2 + 2$ |
|-----|---------------|
| 2 | 6 |
| 1 | 3 |
| 0 | 2 |
| -1 | 3 |
| -2 | 6 |

- b)



- c) non-linear

4. a)

| x | $y = x^2 + 3$ | Change in y |
|-----|---------------|---------------|
| 3 | 11 | |
| 2 | 6 | -5 |
| 1 | 3 | -3 |
| 0 | 2 | -1 |
| -1 | 3 | 1 |
| -2 | 6 | 3 |
| -3 | 11 | 5 |

- b) different

5. the same; different

Blackline Masters Answers

CHAPTER 7 Analysing Linear Relations

Get Ready 1

1. a) $\frac{2}{3}$ b) $\frac{5}{9}$ c) $\frac{3}{5}$
 d) $\frac{2}{3}$ e) $\frac{3}{5}$ f) $\frac{1}{2}$
 g) $\frac{8}{9}$ h) $\frac{6}{7}$
2. a) $\frac{2}{3}$ b) $\frac{1}{2}$ c) $\frac{3}{4}$ d) $2\frac{1}{2}$
3. a) $1\frac{1}{3}$ b) $3\frac{1}{3}$ c) $2\frac{1}{7}$ d) $4\frac{3}{4}$

Get Ready 2

1. 1
 2. -2
 3. 2
 4. -1
 5. $-\frac{5}{13}$
 6. $\frac{1}{2}$
 7. 5
 8. 5

Get Ready 3

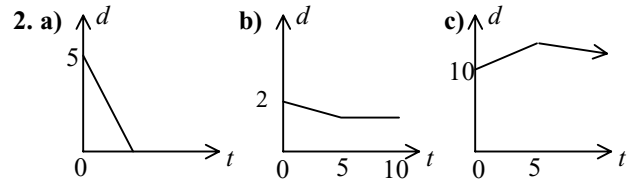
1. a) 15 b) -10 c) 3 d) $-\frac{1}{2}$
 2. a) 11 b) -9 c) 5 d) 3
 3. a) 15 b) 14 c) -10 d) 1
 4. a) -30 b) -5 c) -9 d) -4

Get Ready 4

1. a) 3 b) -2 c) -5
 d) 2 e) 2 f) $\frac{1}{2}$
2. a) 0 b) -5 c) 5
 d) 4 e) 3 f) $\frac{1}{3}$

7.1 Motion Sensors and Distance-Time Graphs

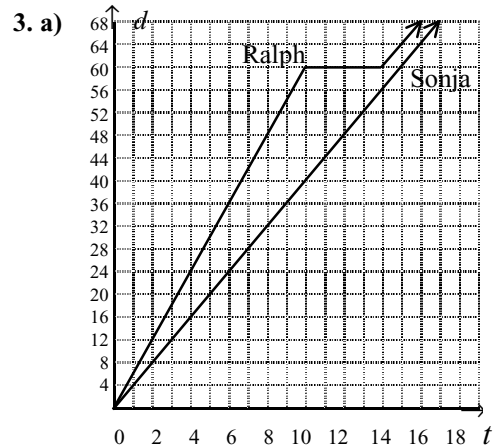
1. a) C b) B c) D d) A



3. A. Walking quickly away from the sensor.
 B. Standing still.
 C. Walking very slowly toward the sensor.
 D. Walking quickly away from the sensor.

7.2 Slope

1. a) rise = 3, run = 6, slope = $\frac{1}{2}$
 b) rise = -3, run = 4, slope = $-\frac{3}{4}$
 c) rise = 4, run = 2, slope = 2
2. Melody walks quickly away from the sensor, slows down, then stands still.



- b) Ralph. He is 1 s ahead of Sonja for the remainder of the walk to the theatre.

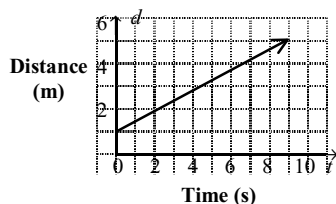
7.3 Applying the Slope Formula

1. a) $-\frac{2}{3}$ b) $-\frac{1}{2}$

2. a) $\frac{1}{2}$ b) $-\frac{3}{5}$

3. a) 0.4 m/s

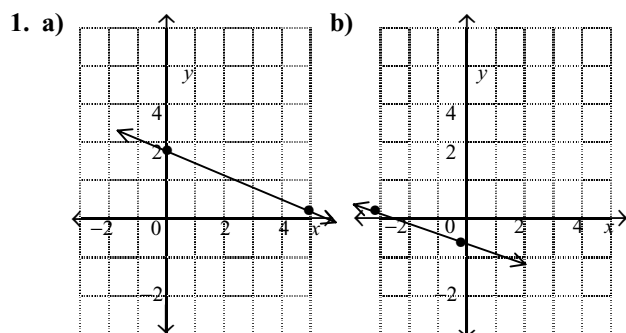
b)



4. a) 100 m/min for 3 min; 0 m/min for 2 min; 300m/min for 1 min

b) 120 m/min for 5 min; 0 m/min for 1 min

7.4 Graphing Lines Using Intercepts



2. a) x-intercept: 1, y-intercept: -3

b) x-intercept: 3, y-intercept: 4

3. a) slope $\frac{1}{3}$ b) slope $-\frac{1}{2}$

4. a) 6 m b) 5 s

c) slope $-\frac{6}{5}$, speed 1.2 m/s

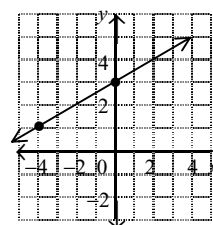
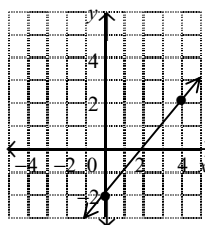
7.5 The Equation of a Line: $y = mx + b$

1. a) slope 2, y-intercept -1 b) slope $\frac{1}{2}$, y-intercept 5

2. a) slope $-\frac{1}{2}$, y-intercept 2; $y = -\frac{1}{2}x + 2$

b) slope 2, y-intercept 4; $y = 2x + 4$

3. a) $y = x - 2$ b) $y = \frac{1}{2}x + 3$



4. a) 3 is the C-intercept or fixed cost; 0.6 is the slope or cost per kilometre.

b) The graph of the line would shift upwards by 1; C-intercept increases to 4.

c) $C = 3 + 0.25k$

7.6 Constructing Linear Models: The Line of Best Fit

1. a) slope 1,

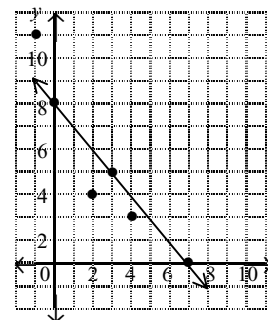
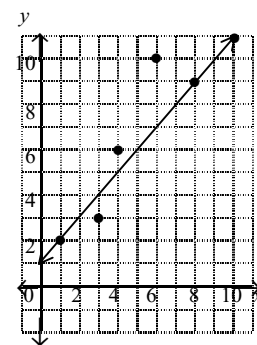
y-intercept 1.6;

$y = x + 1.6$

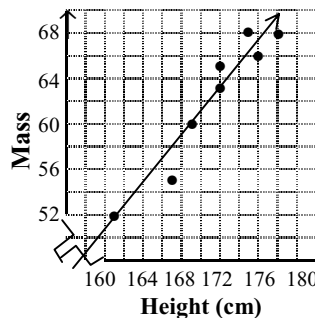
b) slope -1.2,

y-intercept 7.3;

$y = -1.2x + 7.3$



2. a)



b) $m = 1.05$, $b = -117$

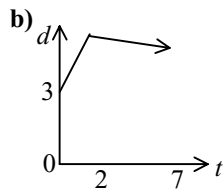
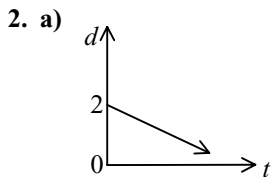
c) $m = 1.05h - 117$

d) 62 kg

e) 159 cm

Chapter 7 Review

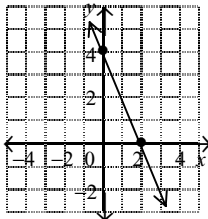
- Walk away from the sensor at a constant speed.
 - Walk toward the sensor at a constant speed.
 - Walk away from the sensor with increasing speed, then constant speed
 - Start at a distance from the sensor and walk away at constant speed.



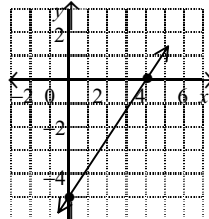
3. a) $\frac{2}{3}$ b) $-\frac{2}{3}$

4. a) $\frac{8}{5}$ b) $-\frac{5}{8}$

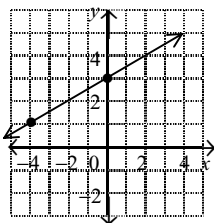
5. a) x-intercept 2,
y-intercept 4



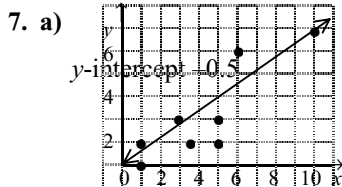
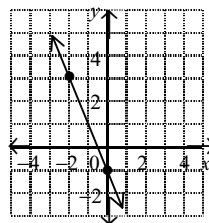
- b) x-intercept 4,
y-intercept -5



6. a) $y = \frac{2}{3}x + 1$



b) $y = -2x - 1$



- b) slope 0.6,

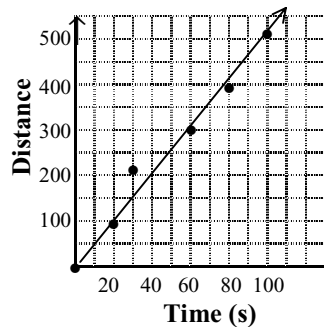
c) $y = 0.6x - 0.5$

Chapter 7 Practice Test

- B
- C
- D
- A

5. D

6. a)



c) $m = 5, b = 0$ d) $d = 5t$

7.1 Discover Master: Motion Sensors and Distance-Time Graphs

Answers will vary.

7.3 Discover Master: Investigating the Slope Formula Using *The Geometer's Sketchpad*®

See section 7.3 notes in the Teacher's Resource.

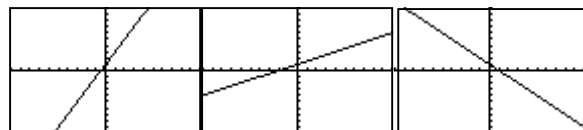
7.5 Discover Master: Exploring the Properties of m and b

1. $m = 1$, y-intercept = 1

2. a) A: $y = 2x + 1$, B: $y = 0.5x + 1$, C: $y = -x + 1$

- b) A: steeper positive slope,
B: shallower positive slope,
C: negative slope

d) A: B: C:



3. a) 0 b) undefined c) Answers will vary.

4. a) One. A horizontal line intersects the y-axis at only one place.

b) If the vertical line is the y-axis, there are infinite number of y-intercepts. Otherwise, there are none because the vertical line runs parallel to the y-axis and will never intersect it.

5. a) A: The graph will shift upwards and keep the same slope.

B: The graph will shift downwards and keep the same slope.

Blackline Masters Answers

CHAPTER 8 Applying Exponents

Get Ready 1

1. a) 49 b) 125 c) 128 d) 243
e) 4096 f) 6561 g) 1728 h) 10 000
i) 46 656 j) 16 777 216 k) 28 561 l) 161 051
m) 1 n) 0

Get Ready 2

1. a) 48 b) 96 c) 21 d) 49
e) 32 f) 289 g) 8 h) 129
i) 3 j) 15

Get Ready 3: Adding and Subtracting Integers

1. a) -4 b) -14 c) -4 d) 4
e) 14 f) -14 g) 14 h) -15
i) -11 j) 11 k) -11 l) -15
m) 15 n) 15

Get Ready 4: Multiplying Fractions

1. a) $\frac{4}{25}$ b) $\frac{16}{49}$ c) $\frac{1}{512}$ d) $\frac{1}{1000}$
e) $\frac{1}{16}$ f) $\frac{1}{81}$ g) $\frac{16}{625}$ h) $\frac{243}{32}$
i) $\frac{1}{1024}$ j) $\frac{16\ 807}{32\ 768}$

8.1 Powers With Rational Bases

1. a) $\frac{9}{16}$ b) $\frac{8}{125}$ c) $\frac{81}{2401}$ d) $\frac{1}{3125}$
e) $\frac{1728}{1331}$ f) $\frac{32\ 768}{243}$ g) $\frac{16}{81}$
2. a) $\frac{w^5}{z^5}$ b) $\frac{a^{12}}{b^{12}}$
3. a) -64 b) $\frac{9}{49}$ c) $\frac{1}{4096}$
d) $-\frac{1}{243}$ e) $\frac{256}{81}$

8.2 Exponent Rules

1. a) 7^7 b) 5^{12} c) 13^3
d) 6^2 e) 7^{12}
2. a) w^{15} b) y^{20} c) t^3
d) h^{30} e) q^{30}
3. a) $5^2 = 25$ b) $5^6 = 15\ 625$ c) $3^9 = 19\ 683$
d) $4^4 = 256$ e) $5^4 = 625$
4. a) 14 b) 15 c) 5 d) 18

8.3 Zero and Negative Exponents

1. a) $\frac{1}{10^2}$ b) $\frac{1}{2^{10}}$ c) $\frac{1}{300}$ d) $\frac{1}{222^{222}}$
2. a) $\frac{1}{125}$ b) 1 c) $\frac{1}{125}$ d) $\frac{1}{121}$
3. a) -5 b) 0 c) 3
4. a) $7^2 = 49$ b) $4^{-4} = \frac{1}{256}$ c) $5^{-6} = \frac{1}{15\ 625}$
d) $10^9 = 1\ 000\ 000\ 000$ e) $12^{-2} = \frac{1}{144}$
f) $6^{-5} = \frac{1}{7776}$ g) $8^{-2} = \frac{1}{64}$

8.4 Scientific Notation

1. a) 3 b) 7 c) -4
2. a) 7.34×10^{-3} b) 4.41×10^{10} c) 4.5×10^{-10}
3. a) 8 000 000 b) 0.000 000 021 13
c) 470 000 000 000
4. 567 800
5. a) 1.955×10^9 b) 2.618×10^3 c) 2.9211×10^{-1}
d) 2×10^3

Chapter 8 Review

- a) $\frac{49}{25}$ b) $\frac{16}{625}$ c) $\frac{27}{8}$
- a) 4^{19} b) 63^{32} c) r^{15} d) d^{20}
e) 10^6 f) k^2 g) 17^{15} h) f^{28}
i) w^{11} j) 11^3 k) z^6 l) 6^2
- a) $30^2 = 900$ b) $4^{10} = 1\ 048\ 576$
c) $2^{18} = 262\ 144$
- a) $\frac{1}{44^5}$ b) $\frac{1}{12^{11}}$ c) $\frac{1}{88^2}$ d) $\frac{1}{1000}$
- a) $\frac{1}{4096}$ b) 3125 c) $\frac{1}{64}$ d) $\frac{1}{10\ 000}$
e) 243 f) $\frac{1}{343}$
- a) 5.6×10^7 b) 1.7×10^{-4}
- a) 0.000 034 b) 7 890 000 000
- a) 4.05×10^7 b) 3.99 c) 1.7×10^{-5}

Chapter 8 Practice Test

- B
- D
- D
- D
- a) $\frac{9}{49}$ b) 1 c) $\frac{1}{17}$ d) 6561
e) 1296 f) 625
- a) 2^6 b) 5^5 c) 4^3
- a) 2.42×10^9 b) 4.5×10^{-7}
- 0.000 046

Blackline Masters Answers

CHAPTER 9 Exploring Polynomials

Get Ready 1

1. a) $4x - 1$ b) $2x^2 - 1$ c) $x^2 - 3x$
d) $-x^2 + 4$ e) $2x^2 + x - 3$

2. a) Answers may vary.

Get Ready 2

1. a) $10t^2$ b) y^5 c) $-r^6$ d) w^2
e) x^{10} f) $\frac{w^3}{n^3}$ g) $-28q^3$ h) $60c^3$
i) d^6 j) $20h^8$

Get Ready 3

1. $P = 40$ cm, $A = 91$ cm²
2. a) 210 cm² b) 67.5 cm² c) 422.5 cm²

Get Ready 4

1. a) $SA = 268$ cm², $V = 264$ cm³
b) $SA = 1350$ cm², $V = 3375$ cm³
c) $SA = 40$ cm², $V = 8$ cm³
d) $SA = 508$ cm², $V = 520$ cm³

9.1 Introducing Polynomials

1. a) 4 b) 3
2. a) 2.5 b) -3 c) 1
3. a) 4 b) 12 c) 211
4. a) $2x + 48$ b) $8x^2 + 4x - 7$ c) $-5x^3 + 7x^2 - 14$
5. $20x$
6. a) $2h$ b) $h + 10$ c) $h - 3$

9.2 Adding and Subtracting Polynomials

1. a) $4x + 10$ b) $11y^2 - 5$ c) $-7d + 73$
d) $10w^2 - 4w + 12$ e) $5t^3 + 6t^2 - 5t - 24$
f) $3x^2 - 19x + 9$ g) $-x^2 + 2x - 1$
2. a) $12x - 1$ b) 23
3. a) $220x + 3000$ b) \$9600

9.3 Multiplying a Monomial and a Polynomial

1. a) $3x + 27$ b) $-4x - 4$ c) $-2x + 22$
d) $x^2 + 12x$ e) $-5x^2 - 8x$ f) $7x^2 - 161x$
g) $24x^2 - 40x$ h) $24x^2 + 40x$ i) $5x^2 + x$
j) $2x^2 + 12x - 24$
2. a) $15x^2 + 3x$ b) $14x^2 - 10x$

9.4 Expanding and Simplifying Polynomial Expressions

1. a) $8x + 24$ b) $-x - 32$ c) $6x + 46$
d) $36x + 62$ e) $-14x + 34$ f) $-x^2 - 5x$
2. a) i) $x(6x - 4x) + 4x(x + x + 5)$
ii) $10x^2 + 20x$
b) i) $17x(4x + 3) - 3x(x + 11)$
ii) $65x^2 + 18x$

Review

1. a) 1 b) 3 c) -1
2. a) 13 b) 0 c) 10
3. a) $10t - 1$ b) $-w^2 + 4w - 4$
4. $5t$
5. a) $10x - 4$ b) $7t + 5$ c) $-v + 15$
d) $2s^2 - 3s - 5$ e) $8a^2 + 2a$
6. a) $7x + 14$ b) $-3x + 3$ c) $48x + 16$
d) $7x^2 - 28x$ e) $-5x^3 - x^2 + 21x$
7. a) $3x(7x + 5)$ b) 600 cm²
8. a) $13x + 20$ b) $21x - 25$ c) $32x + 20$
d) $11x^2 + 22x$ e) $-15x^2 + 48x$ f) $22x^2 + 91x - 5$

Practice Test

1. B
2. B
3. C
4. a) $h^2 - 4h - 17$ b) $4u^3 - 6u^2 + 1$
5. a) $12x - 4$ b) $24x + 38$ c) $10x^2 + 38x$
6. a) $12x + 2$ b) $6x^2 + x$

Blackline Masters Answers

CHAPTER 10 Modelling With Equations

Get Ready 1

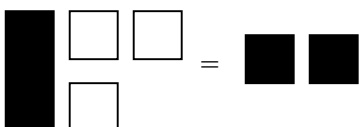
1. a) $14x + 2$ b) $9w - 7$ c) $-5r + 16$
 d) $-8h - 25$ e) $23k + 1$ f) $13z + 14$

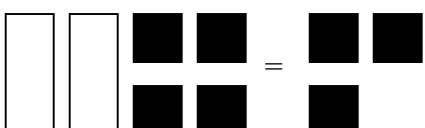
Get Ready 2


1. a) $2x + 6$ b) $15x + 5$ c) $-35x + 21$
 d) $-18x - 42$ e) $28x - 42$
 2. a) $6k - 3$ b) $-2m - 16$ c) $-15t + 5$
 d) $10h + 30$ e) $20n + 8$

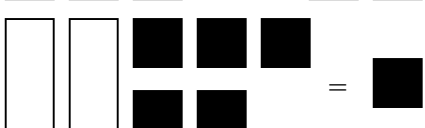
Get Ready 3

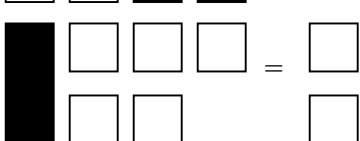
1. a) $2x = -3$ b) $x - 4 = 1$ c) $x + 2 = -3$
 d) $-3x + 1 = -4$ e) $2x - 1 = 5$

2. a) 

b) 

c) 

d) 

e) 

Get Ready 4

1. a) -2 b) 1 c) $\frac{1}{2}$ d) $\frac{3}{4}$

Get Ready 5

1. a) $y = -\frac{3}{2}x + 8$ b) $y = \frac{1}{2}x + \frac{9}{2}$
 c) $y = \frac{1}{3}x + \frac{7}{3}$ d) $y = \frac{-3}{2}x - \frac{13}{2}$

10.1 Solving One- and Two- Step Equations

1. a) $x = 5$ b) $y = 15$ c) $x = -4$ d) $w = -33$
 e) $u = 7$ f) $k = 8$ g) $n = -3$ h) $h = -6$
 i) $r = 2$ j) $t = 7$

10.2 Multi-Step Equations

1. a) $x = 2$ b) $x = 8$ c) $x = 3$ d) $x = -5$
 e) $x = -3$ f) $x = -7$ g) $x = 0$ h) $x = 3.5$
 i) $x = -1$

10.3 Modelling With Formulas

1. a) $x = t - b$ b) $x = \frac{w}{c}$ c) $x = qf$
 d) $x = \frac{v+r}{a}$ e) $x = z - y$ f) $x = \frac{t-7d}{w}$
 g) $x = wf + k$ h) $x = \frac{4ab-s}{r}$
 i) $x = f(c - 10v)$ j) $x = \frac{2h-y}{t}$

10.4 Modelling With Algebra

1. a) $x + 7$ b) $4x$ c) $3x - 1$ d) $16 - x$
 2. a) $\frac{x}{6} = 5$ b) $3(x + 4) = 27$ c) $3x + 11 = 20$
 3. 900 and 3400
 4. 12 cm
 5. 22 cm

10.5 Equation of a Line, Given the Slope and a Point

1. a) $y = -x + 5$ b) $y = 7x - 2$
2. a) $y = 2x - 5$ b) $y = 5x + 27$ c) $y = \frac{1}{2}x - \frac{11}{2}$
3. a) \$60 b) $y = 1.75x + 60$ c) \$200
d) 17 kg

10.6 Equation of a Line, Given Two Points

1. $\frac{1}{3}$
2. a) $y = -1.2x + 7.4$ b) $y = -2x + 18$
3. a) 65 m/h b) 220 m
c) $y = 65x + 220$ d) 675 m

Chapter 10 Review

1. a) $x = 13$ b) $x = -16$ c) $x = -5$
2. 180
3. a) $x = 10$ b) $x = 4$ c) $x = -3$
4. a) $x = \frac{a}{c}$ b) $x = \frac{y-b}{m}$
5. a) $\frac{1}{2}x = 17$ b) $35 - 2x = 9$
6. First project 7 weeks, second project 14 weeks
7. $y = 3x - 22$
8. $y = \frac{1}{3}x + 2$
9. a) \$350 b) \$5300 c) $y = -350x + 5300$

Chapter 10 Practice Test

1. B
2. B
3. D
4. C
5. $x = 32$
6. $x = \frac{s}{t} + 3$
7. a) 1 b) $y = x + 1$
8. $y = 2x - 2$

Cumulative Review, Chapters 8 to 10

1. a) $\frac{343}{64}$ b) $\frac{81}{625}$
2. a) 6^{10} b) h^{12} c) 2^{16} d) y^{10}
3. a) $\frac{1}{9}$ b) 1
4. $\frac{1}{4}$
5. 4.5×10^{-5}
6. 357 900 000
7. a) 52 b) 36 c) 342
8. a) $2x - 3$ b) $4x^2 - 11x + 1$
9. a) $w + 7$ b) $3p - 2$
10. a) $2t - 14$ b) $-13v + 23$
11. a) $62x - 33$ b) $18x + 79$ c) $5x^2$ d) $x^2 + 16x$
12. a) $y = 13$ b) $r = -2$ c) $t = 4$ d) $x = -9$
13. \$1100
14. a) $x = nt$ b) $x = \frac{v+w}{t}$
15. $y = 0.5x - 6$
16. $y = -2x + 7$

10.2 Discover: Solving Multi-Step Equations

1. $x, 2x, x, 2x, 2x, 5x, 5x, x = 5, 10, 5$
2. $x, x + 2x + 2x, 32 = 5x, x = 6.4$;
Two sides with length 12.8 m and one side with length 6.4 m.

Blackline Masters Answers

CHAPTER 11 Exploring Geometric Relationships

Get Ready 1

- a) right b) obtuse c) acute
- a) equilateral b) scalene c) isosceles
- a) E b) A c) C
d) D e) F f) B

Get Ready 2

- a) 33° b) 117° c) 90°
- a) 40° b) 42° c) 15° d) 65°
e) 150° f) 141° g) 27°

Get Ready 3

- a) $\angle ABC$ b) $\angle CBD$ c) $\angle BAC$ d) $\angle DBE$
- a) AB b) CD c) AC d) BC

11.1 Investigating Angles of Triangles and Quadrilaterals

- a) $x = 40^\circ, y = 70^\circ$ b) $x = 45^\circ, y = 45^\circ$
c) $x = 35^\circ$ d) $x = 145^\circ$
e) $x = 50^\circ, y = 40^\circ$ f) $x = 80^\circ$
g) $x = 143^\circ, y = 132^\circ$ h) $x = 120^\circ$
i) $x = 32^\circ$ j) $x = 264^\circ$

11.2 Investigating Angles and Parallel Lines

- a) a, b b) b, c c) a, c
- a) $a = 50^\circ$ b) $a = 130^\circ$ c) $a = 20^\circ$
d) $a = 69^\circ$ e) $a = 95^\circ$ f) $a = 70^\circ$

11.3 Investigating Angle Bisectors, Medians, and Altitudes of Triangles

- a) false b) true c) false
d) false e) true
- a) median b) altitude c) angle bisector
- 7.5
- a) incentre b) centroid c) altitude
d) orthocentre

Chapter 11 Review

- a) $x = 22.5^\circ, y = 22.5^\circ$ b) $x = 135^\circ$ c) $y = 115^\circ$
d) $x = 140^\circ$ e) $x = 52^\circ$
- a) $a = 126^\circ$ b) $x = 36^\circ$ c) $a = 120^\circ, b = 60^\circ$
d) $d = 128^\circ$ e) $x = 44^\circ, y = 68^\circ$
- a) C b) A c) D d) B

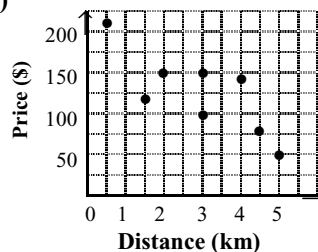
Chapter 11 Practice Test

- C
- B
- B
- a) $x = 100^\circ$ b) $x = 30^\circ$ c) $x = 135^\circ$ d) $x = 65^\circ$
- a) AD b) BE c) CF

Course Review

- a) 25 cm b) 26 cm
- a) 45 b) 96
- 15 cm^2
- 7 cm
- 5.8 m
- $P = 106 \text{ cm}, A = 670 \text{ cm}^2$
- a) 25 cm^3 b) 1000 cm^3
- 200 cm^3
- primary
- mean: 7.5, median: 7, mode: 7

11. a)

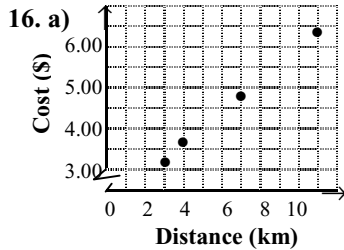


b) As the distance from the station increases, the price of a hotel room decreases.

- a) -7 b) 11 c) 10
d) $1\frac{1}{4}$ e) $-\frac{2}{3}$
- 2.625

14. a) 2:1 b) 6 cups

15. 11.5



b) partial c) \$5.60

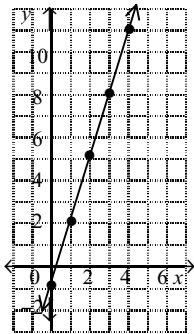
| x | y | First Differences |
|---|----|-------------------|
| 0 | 5 | |
| 1 | 6 | 1 |
| 2 | 9 | 3 |
| 3 | 14 | 5 |
| 4 | 21 | 7 |

17. non-linear

18. a)

| x | y |
|---|----|
| 0 | -1 |
| 1 | 2 |
| 2 | 5 |
| 3 | 8 |
| 4 | 11 |

b)



19. $-\frac{1}{4}$

20. $y = \frac{2}{3}x + 2$

21. a) $\frac{81}{4096}$ b) $\frac{25}{49}$ c) $\frac{1}{125}$ d) 1

22. a) 7^{10} b) x^6 c) y^{20} d) 3^2

23. 4.53×10^7 km

24. 0.000 000 104 m

25. $(34x^2) - (x^3) + (60x) - (123)$

26. a) $25x - 54$ b) $66x - 25$ c) $13x^3 - 7x$

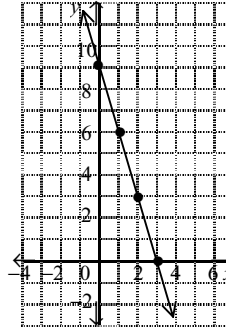
27. $21x^2 + 12x + 12$

28. a) $k = -6$ b) $t = -2$ c) $n = 5$ d) $d = 30$

29. a) $a = tw$ b) $a = \frac{v-q}{4}$

30. car 1: 213 000 km, car 2: 107 000 km

31. a) b) $y = 3x + 3$



32. a) $a = 70^\circ$ b) 50°

c) $c = 55^\circ, d = 50^\circ, e = 130^\circ$

33. $x = 48^\circ, y = 90^\circ$

11.1 Discover: Angles of Triangles and Quadrilaterals

1. a) Triangle 1: $67^\circ, 43^\circ, 70^\circ, 180^\circ$;

Triangle 2: $50^\circ, 65^\circ, 65^\circ, 180^\circ$;

Triangle 3: $35^\circ, 106^\circ, 39^\circ, 180^\circ$;

sum, 180°

2. a) $k = 62^\circ$ b) $m = 26^\circ$

3. 360°

4. $133^\circ, 100^\circ, 127^\circ$; sum, 360°

5. a) $p = 115^\circ$ b) $w = 125^\circ$

6. $u = 55^\circ, v = 75^\circ; 130^\circ; 130^\circ$

$x = 55^\circ, y = 62^\circ, 117^\circ; 117^\circ$

$g = 28^\circ, h = 96^\circ; 124^\circ; 124^\circ$

exterior angle, sum, interior

7. a) $d = 136^\circ$ b) $z = 61^\circ$

11.4 Discover 2: Sides and Diagonals of Quadrilaterals

See page 212 of the Teacher's Resource.