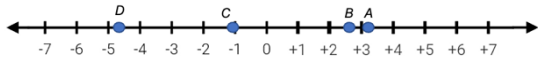


**ANSWERS TO  
EXERCISES AND  
ASSESSMENTS**

**CHAPTER 1**

**Exercises 1.1**

1. a)  $>$  b)  $>$  c)  $<$  d)  $>$  2. a) Rational  
 b) Rational c) Irrational d) Rational  
 e) Rational f) Irrational g) Rational  
 h) Rational  
 3.



4. a)  $>$  b)  $<$  c)  $<$  d)  $>$   
 5. a) -5.70, -5.07, -0.57, -0.507  
 b)  $-\frac{2}{3}$ , -0.6, -0.4,  $-\frac{3}{8}$  6. a)  $0.\bar{6}$  b)  $2.\bar{7}$

**Exercises 1.2**

1. a) -2 b) +55 c) -2 d) -25 2. a) +3  
 b) +30 c) -56 3. a) 27 b) -61 c) 80  
 d) -60 e) -97 f) 96 4. a) 137 b) -20  
 c) 102 d) 27 e) -118 f) -50 g) -20  
 h) 144

**Exercises 1.3**

1. a) left b) left c) right d) right 2. a) 3.7  
 b) -9.1 c) 6 d) -8.1 3. a) 2.7 b) -6.1  
 c) 8 d) -6 e) -9.7 f) 9.6 4. a) 13.7 b) 0  
 c) 10.2 d) 2.7 e) -11.8 f) -5 g) -2  
 h) 14.4 i) -5.3

**Exercises 1.4**

1. He is correct. 2. a) 0.35 b) +6.72  
 c) -1.62 d) -8.37 3. a) +0.9 b) -0.9  
 c) +2.1 d) +2.7 4. a) -1.8 b) 16.28  
 c) -6.24 d) -7.56 5. a) -2 b) 1.5 c) -3.8  
 d) -4 6. a) 5 b) 0.048 c) -9.1 d) -8.2  
 7. a) 11.448 b) -28.7 c) 88 d) -3.828  
 e) -46.1 f) 9.085 8. a) 7.2 b) 3.42  
 c) -8.7 d) -4.94

**Exercises 1.5**

1. a)  $\frac{4}{7}$  b)  $\frac{1}{5}$  c)  $\frac{4}{9}$  2. a)  $\frac{2}{7}$  b)  $\frac{3}{5}$  c)  $\frac{4}{9}$   
 3. a)  $\frac{27}{28}$  b)  $-\frac{7}{15}$  c)  $-1\frac{1}{12}$  d)  $1\frac{1}{21}$  e)  $\frac{7}{20}$   
 f)  $-1\frac{1}{18}$  4. a)  $\frac{1}{24}$  b)  $1\frac{3}{20}$  c)  $-\frac{7}{9}$  d)  $\frac{1}{6}$   
 e)  $1\frac{11}{20}$  f)  $-\frac{1}{9}$  5. a)  $\frac{19}{28}$  b)  $-\frac{1}{15}$  c)  $\frac{11}{36}$  d)  $-\frac{1}{12}$   
 e)  $-\frac{23}{36}$  f)  $-\frac{5}{6}$

**6.**

	2	3	4	5	6	8	9	10
22	yes	no	no	no	no	no	no	no
50	yes	no	no	yes	no	no	no	yes
36	yes	yes	yes	no	yes	no	yes	no
24	yes	yes	yes	no	yes	yes	no	no
99	no	yes	no	no	no	no	yes	no
66	yes	yes	no	no	yes	no	no	no

7. 2344 is not divisible by 6 because it is not divisible by 3. It is divisible by 8.

**Exercises 1.6**

1. a)  $\frac{3}{35}$  b)  $-\frac{2}{15}$  c)  $\frac{5}{27}$  d)  $-\frac{4}{15}$  e)  $-\frac{4}{15}$  f)  $\frac{2}{5}$   
 2. a)  $\frac{3}{5}$  b)  $\frac{1}{6}$  c)  $\frac{2}{27}$  d)  $-\frac{1}{15}$  e)  $\frac{1}{7}$  f)  $-\frac{1}{5}$   
 g)  $-\frac{2}{15}$  h)  $-\frac{2}{21}$  i)  $\frac{1}{5}$  j)  $-\frac{2}{7}$  k)  $\frac{2}{15}$  l)  $\frac{1}{5}$   
 3. a)  $\frac{5}{14}$  b)  $-\frac{3}{2}$  c)  $\frac{9}{25}$  d)  $-\frac{8}{25}$  e)  $-1\frac{1}{8}$  f) 4  
 g)  $\frac{7}{8}$  h)  $\frac{1}{2}$  i)  $\frac{2}{5}$  j)  $1\frac{1}{2}$  k)  $\frac{3}{10}$  l)  $\frac{8}{21}$

**Exercises 1.7**

1. a)  $10\frac{26}{35}$  b)  $-1\frac{1}{20}$  c)  $8\frac{1}{3}$  d)  $\frac{1}{15}$  e)  $2\frac{1}{15}$   
 f)  $3\frac{11}{28}$  2. a)  $-2\frac{17}{30}$  b)  $-1\frac{1}{15}$  c)  $-1\frac{5}{6}$  d)  $-8\frac{3}{20}$   
 e)  $-7\frac{5}{6}$  f)  $-1\frac{2}{3}$  3. a)  $-4\frac{2}{5}$  b)  $-7\frac{1}{12}$  c)  $-\frac{19}{63}$   
 d)  $-3\frac{17}{20}$  e)  $3\frac{2}{3}$  f)  $-6\frac{59}{63}$  4. a)  $2\frac{6}{13}$  b)  $-\frac{3}{4}$   
 c)  $-1\frac{5}{28}$  d)  $\frac{42}{95}$  e)  $\frac{65}{144}$  f)  $\frac{10}{23}$

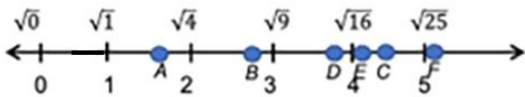
**Exercises 1.8**

1. a) Terminating b) Repeating  
 c) Repeating 2. a)  $0.\bar{5}$  b) 0.3 c) 0.125  
 d)  $0.\overline{36}$  e)  $0.\overline{285714}$  f)  $0.041\bar{6}$  3. a)  $\frac{2}{5}$   
 b)  $\frac{9}{50}$  c)  $\frac{9}{25}$  d)  $\frac{99}{100}$  e)  $\frac{16}{25}$  f)  $\frac{83}{100}$  4. a)  $\frac{1}{9}$   
 b)  $\frac{2}{9}$  c)  $\frac{4}{9}$  d)  $\frac{7}{9}$  5. a)  $\frac{5}{9}$  b)  $\frac{8}{9}$  c)  $\frac{1}{3}$  d)  $\frac{2}{3}$   
 6. a)  $\frac{5}{11}$  b)  $\frac{28}{99}$  c)  $\frac{31}{99}$  d)  $\frac{64}{99}$

**Exercises 1.9**

1. a) 8 b) 11 c) 9 d) 10 e) 12

2.



3. a) 5.4772256 b) 7.7459669  
 c) 4.6904158 d) 9.3808315 e) 10.34408  
 f) 14.899664 4. a) No patterns b) No, they are irrational 5. a) Irrational  
 b) Rational c) Rational d) Rational  
 e) Rational f) Irrational 6. a) 2.236067977  
 b) 4.472135955 c) 6.244997998 7. a) No  
 b) Yes c) No 8. a) Rational b) Irrational  
 c) Irrational 9. a) < b) < c) > d) > e) <  
 f) > g) > h) <

**Self-Assessment – Chapter 1**

1.

Num.	Nat.	Whole	Int.	Rat.	Irr.
3	√	√	√	√	
-10			√	√	
$\frac{11}{3}$				√	
0.9				√	
0.7				√	
$\pi$					√
$1\frac{5}{8}$				√	
1.25				√	
0		√	√	√	
$\sqrt{9}$	√	√	√	√	

2. a) Rational b) Irrational c) Rational  
 3. a)  $\frac{12}{35}$  b)  $-\frac{2}{27}$  c)  $\frac{15}{28}$  d)  $\frac{2}{9}$  e)  $-\frac{3}{20}$  f)  $-\frac{19}{45}$   
 g)  $-\frac{1}{10}$  h)  $-\frac{1}{21}$  i)  $\frac{2}{21}$  j)  $\frac{2}{3}$  k)  $\frac{4}{5}$  l)  $\frac{1}{2}$  4. a) 11  
 b) 8 c) 13 d) 50 5. a)  $\frac{3}{4}$  b)  $\frac{7}{9}$  c)  $\frac{7}{11}$   
 d)  $\frac{8}{33}$  6. a)  $-4\frac{12}{35}$  b)  $-4\frac{3}{4}$  c)  $-7\frac{13}{20}$  d)  $-3\frac{1}{5}$   
 7. Numbers that can be written as fractions and decimal numbers. 8. Irrational numbers cannot be written as a fraction, and the decimals have no pattern or end.

**Performance Task – Chapter 1**

1. a)  $-\frac{3}{8}$  b)  $\frac{1}{5}$  c)  $-\frac{2}{9}$  d)  $-2\frac{13}{35}$  e)  $\frac{4}{15}$  f)  $\frac{25}{72}$   
 2. a)  $-\frac{3}{35}$  b)  $-14\frac{7}{10}$  c)  $\frac{7}{8}$  d)  $-\frac{24}{35}$  e)  $-\frac{1}{2}$

- f)  $\frac{1}{9}$  3. Question 1:  $-2\frac{13}{35}, -\frac{2}{9}, -\frac{3}{8}, \frac{1}{5}, \frac{4}{15}, \frac{25}{72}$   
 Question 2:  $-14\frac{7}{10}, \frac{-24}{35}, \frac{-1}{2}, \frac{-3}{35}, \frac{1}{9}, \frac{7}{8}$

**Chapter 2**

**Exercises 2.1**

1. a)  $4^3$  b)  $7^6$  c)  $2^6$  d)  $12^5$  e)  $5^5$  f)  $9^4$   
 2. a) 8 b) 64 c) 25 d) 216 e) 512 f) 49  
 3. a) 27 b) 125 c) 1024 d) 36 e) 128  
 f) 81 g) 4 h) 1 4. a) 25 b) 49 c) 12  
 d) 4 e) 0.0009 f) 72

**Exercises 2.2**

1. a)  $(-4)^3$  b)  $(-7)^3$  c)  $(-2)^2$  d)  $(-12)^4$   
 e)  $(-5)^5$  f)  $(-9)^4$  2. a) 4 b) 256 c) 9 d) 1  
 e) -512 f) 81 3. a) -81 b) -125 c) -64  
 d) -36 e) -32 f) -81 g) -16 h) -1  
 4. a) -9 b) -16 c) -32 d) -25 e) -49  
 f) -216 5. a)  $3^2 \times 5^2$  b)  $2^6 \times 3^1$   
 c)  $2^4 \times 5^2$  d)  $2^2 \times 7^2$  e)  $3^3 \times 2^5$   
 6. 100 zeros

**Exercises 2.3**

1. a)  $2^5$  b)  $5^8$  c)  $6^6$  d)  $3^5$  2. a)  $(-5)^7$   
 b)  $(-2)^5$  c)  $(-8)^{11}$  d)  $(-7)^{12}$  3. a)  $2^{10}$  b)  $9^{14}$   
 c)  $(-4)^5$  d)  $(-6)^{15}$  4. a) 2187 b) 131,072  
 c) 100,000,000,000,000,000,000  
 d) 65,536 5. a)  $2.7^{23}$  b)  $3.2^{35}$  6. a)  $3^{15}$   
 b)  $2^{25}$  7. a)  $4^8$  b)  $2^5$  c)  $2^4$

**Exercises 2.4**

1. a)  $2^2$  b)  $5^4$  c)  $6^6$  d)  $3^3$  e)  $2^4$  f)  $9^4$   
 2. a)  $4^2$  b)  $7^2$  c)  $5^6$  d) 12 e)  $2^6$  f) 3  
 3. a)  $(-5)^4 = 625$  b)  $(-2) = -2$   
 c)  $(-8)^3 = -512$  d)  $(-7)^2 = 49$  e)  $(-4) = -4$   
 f)  $(-6)^2 = 36$  4. a) -243 b) 3 c) 4096  
 d) 225 e) 216 f) 256 5. a) 16,384  
 b) 2,401 c) 78,125 d) 512 e) 16 f) 7  
 g) 225 h) 16 i) 16 j) -125 6. a) 1 b) 1  
 c) 0 d) 0 e) 1 f) 1 7. a) The answer is always 1. b) Answers will vary. 8. a) The answer is always 0. b) Answers will vary.

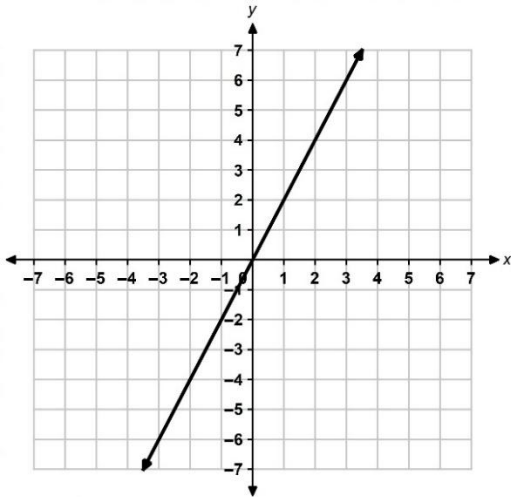
**Exercises 2.5**

1. a) 1 b) 1 c) 1 d) 1 2. a) -1 b) -1  
 c) -1 d) -1 3. a) 1 b) 1 c) 1 d) 1

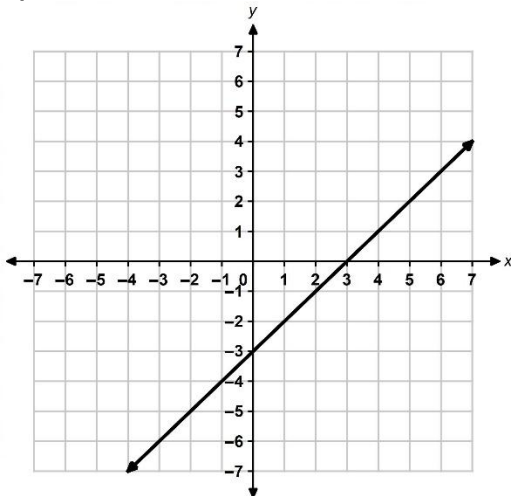


- d) x-intercept = -8, y-intercept = 4
- e) x-intercept = 2, y-intercept = -3
- f) x-intercept = 0, y-intercept =  $1\frac{1}{3}$

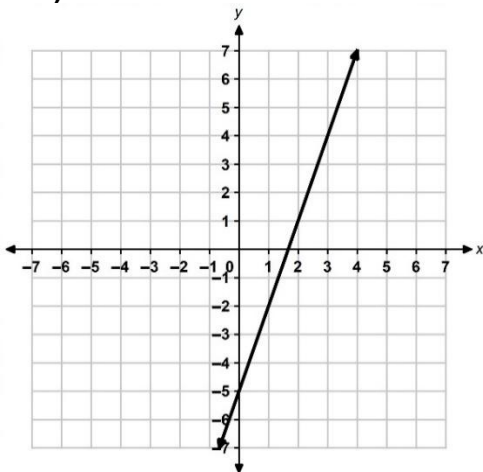
3. a)



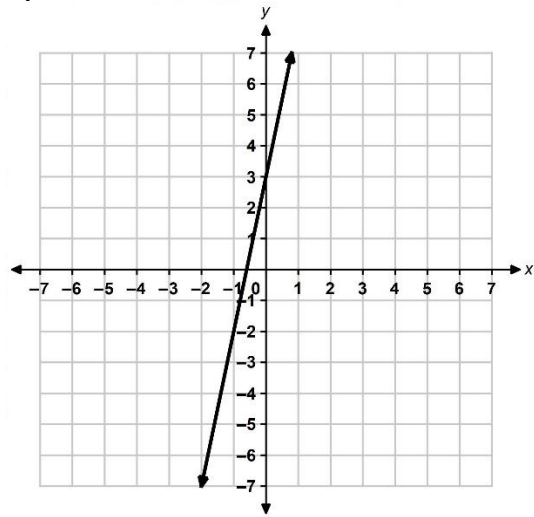
b)



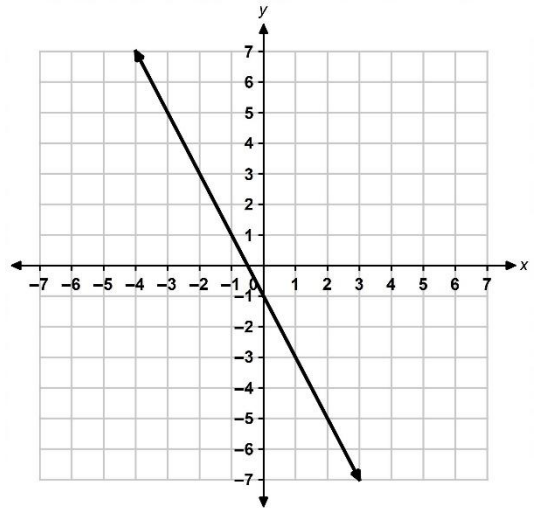
4. a)



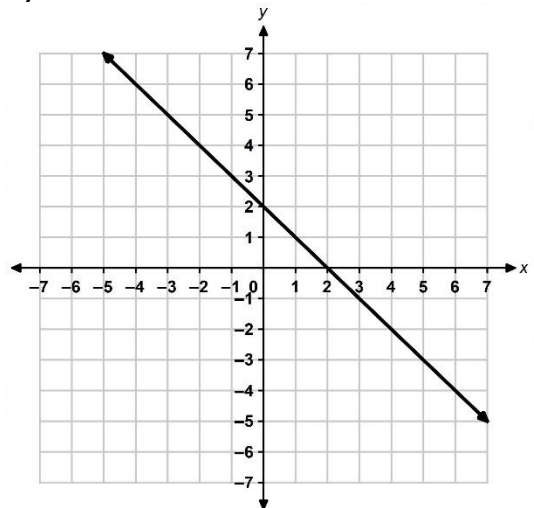
b)



c)



d)

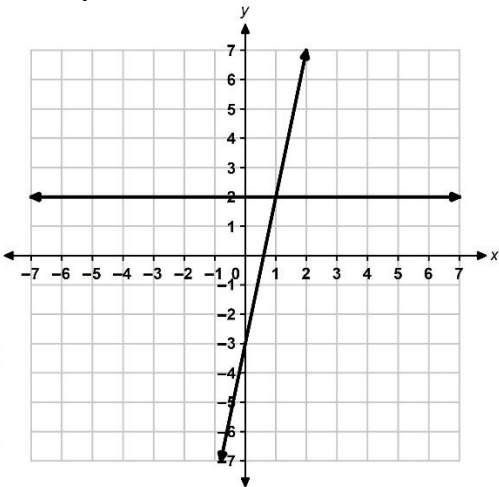


**Exercises 3.2**

1. a) (-3, -2)    b)  $x = -3$     c)  $x = -3$

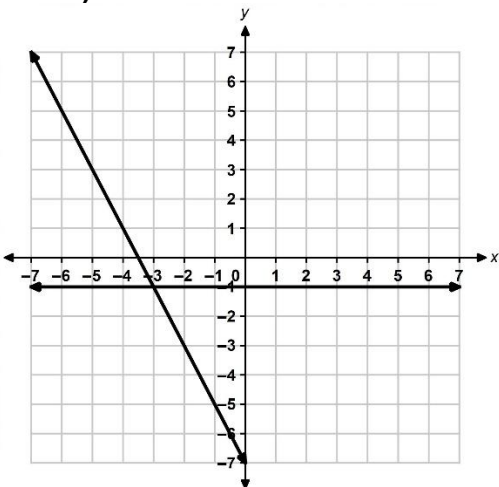
Answers

2. a-b)



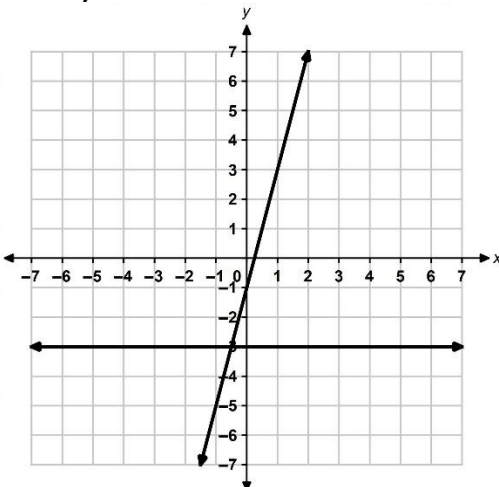
c) (1, 2) d)  $x = 1$

3. a-b)



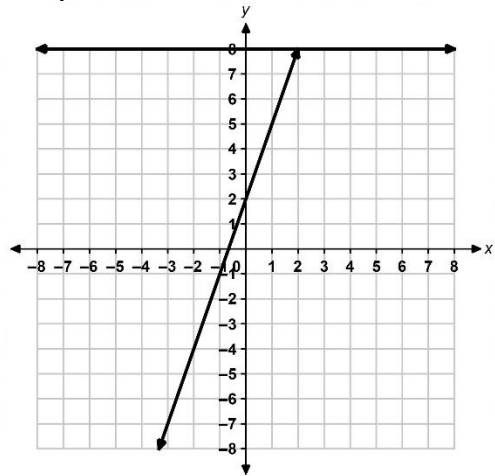
c) (-3, -1) d)  $x = -3$

4. a-b)

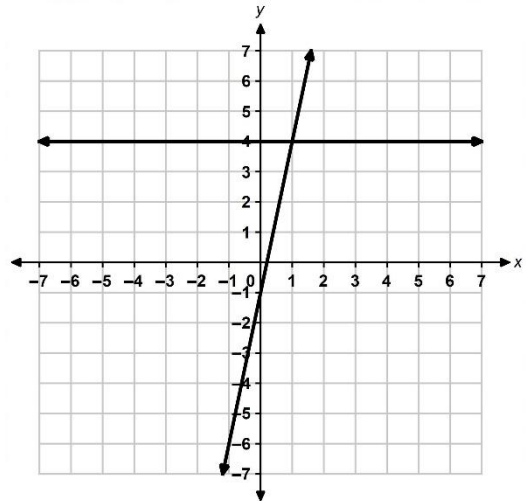


c) (-0.5, -3) d)  $x = -0.5$

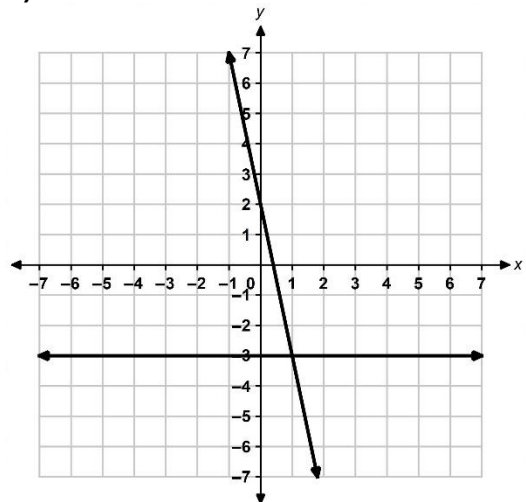
5. a)  $x = 2$



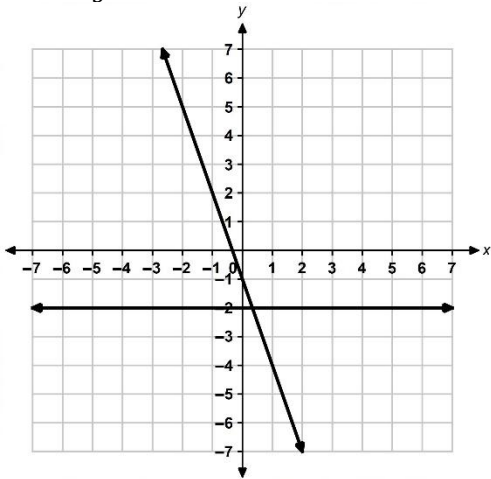
b)  $x = 1$



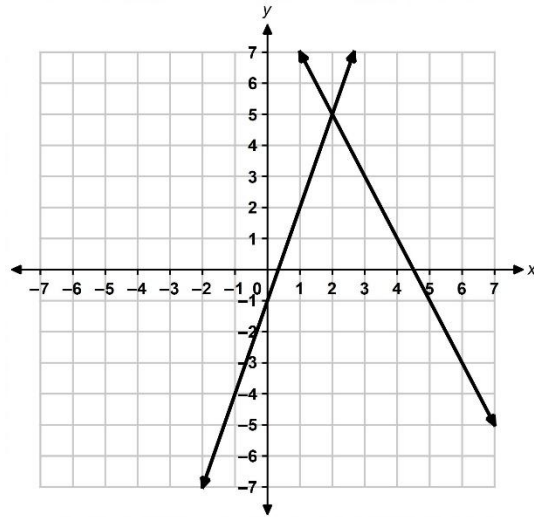
c)  $x = 1$



d)  $x = \frac{1}{3}$

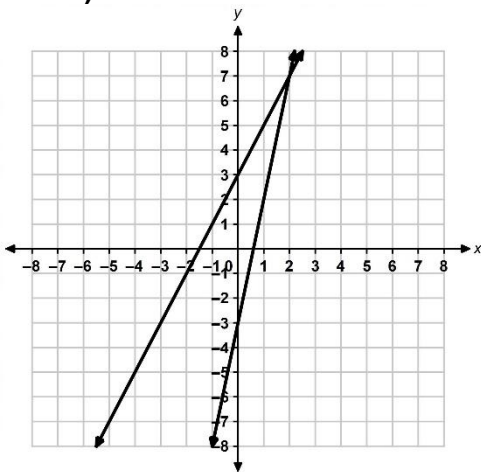


c) (-11, 15) d)  $x = -11$   
4. a-b)

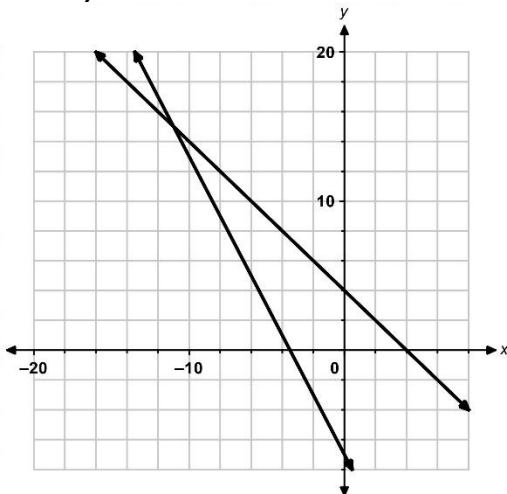


**Exercises 3.3**

1. a) (2, 3) b)  $x=2$  c)  $x = 2$   
2. a-b)



- c) (2, 7) d)  $x = 2$   
3. a-b)



- c) (2, 5) d)  $x = 2$   
5. a)  $x = 3$  b)  $w = -2$  c)  $x = -7$  d)  $n = 5$   
e)  $x = 7$  f)  $x = -4$  6. a)  $x = 1$  b)  $x = 1$   
c)  $y = -11$  d)  $p = -6$  e)  $a = -4$  f)  $b = -5$   
7. a)  $x = 13$  b)  $m = 13$  8. a)  $x = -7$   
b) Question b) has an error.

$$-x - 4 = -6 + x$$

$$-x - x - 4 = -6 + x - x$$

$$-2x - 4 + 4 = -6 - 4$$

$$\frac{-2x}{-2} = \frac{-2}{-2}$$

$$x = 1$$

**Exercises 3.4**

1. a)  $x = 13$  b)  $x = -15$  c)  $x = 3\frac{1}{4}$   
d)  $x = -16$  2. a)  $x = 13$  b)  $x = 6$  c)  $x = 9\frac{2}{3}$   
d)  $x = -6$  3. a)  $x = -11$  b)  $x = 6$  c)  $x = 33$   
d)  $x = 11$  e)  $x = -6$  f)  $x = -11$

**Exercises 3.5**

1. a)  $x = 18$  b)  $x = 20$  c)  $x = 35$  d)  $x = 20$   
2. a)  $x = \frac{3}{5}$  b)  $x = \frac{4}{9}$  c)  $x = \frac{5}{14}$  d)  $x = \frac{4}{5}$   
3. a)  $x = 21$  b)  $x = 8$  c)  $x = 15$  d)  $x = 26$   
e)  $x = 10$  f)  $x = 16$  g)  $x = 15$  h)  $x = 27$   
4. a)  $x = 1\frac{1}{2}$  b)  $x = \frac{5}{8}$  c)  $x = \frac{3}{40}$  d)  $x = \frac{1}{3}$   
e)  $x = 3\frac{3}{4}$  f)  $x = 1\frac{5}{6}$  g)  $x = 3\frac{1}{9}$  h)  $x = 3\frac{3}{7}$

Answers

**Exercises 3.6**

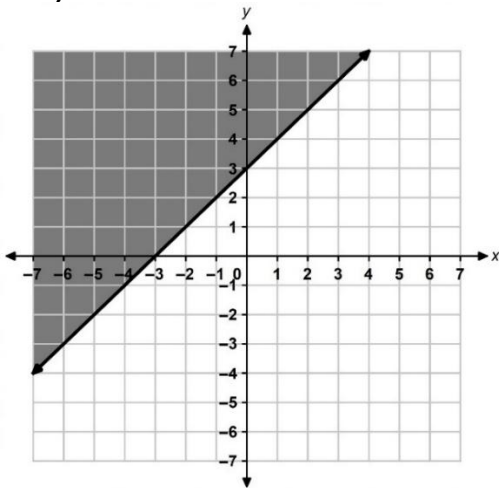
1. a)  $x = 25$  b)  $x = 81$  c)  $x = 4$   
 d)  $x = 225$  2. a)  $x = 12$  b)  $x = 20$   
 c)  $x = 72$  d)  $x = 16$  3. a)  $x = 114$   
 b)  $x = 12$  c)  $x = 7$  d)  $x = 11$  e)  $x = 16$   
 f)  $x = 6$  g)  $x = 3$  h)  $x = 8$  4. a)  $x = 78$   
 b)  $x = 51$  c)  $x = 13$  d)  $x = 3$  e)  $x = 33$   
 f)  $x = 7$  g)  $x = 30$  h)  $x = 14$

**Exercises 3.7**

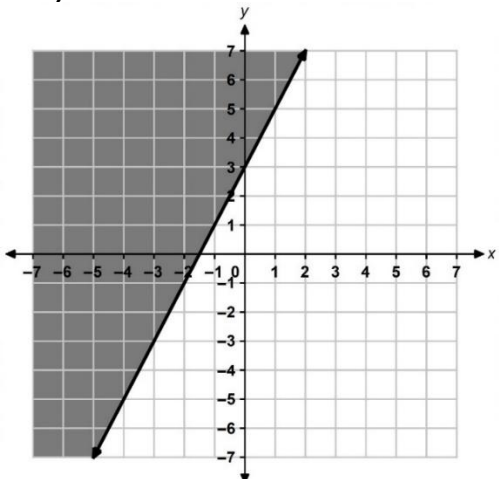
1. a)  $x > 1$  b)  $x < 3$  c)  $x \leq 2$  2. a)  $x < -3$   
 b)  $x > -5$  c)  $x \geq -7$  3. a)  $x < -2$  b)  $x > 3$   
 c)  $x \geq -1$  4. a)  $x \leq -3$  b)  $x > -3$  c)  $x \leq -2$   
 d)  $x < -9$  5. a)  $>$  b)  $\leq$  c)  $\geq$  d)  $>$   
 6. a)  $\geq$  b)  $>$  7. a)  $x > -6$  b)  $x \leq 4$

**Exercises 3.8**

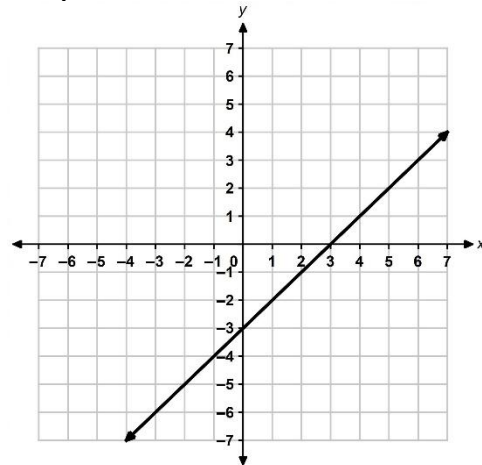
1. (1, 5) 2. (5, 1) 3. (0, 0), (1, 0)  
 4. b) False



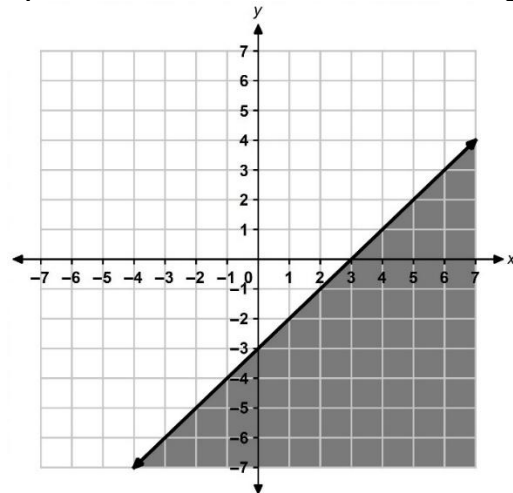
5. b) False



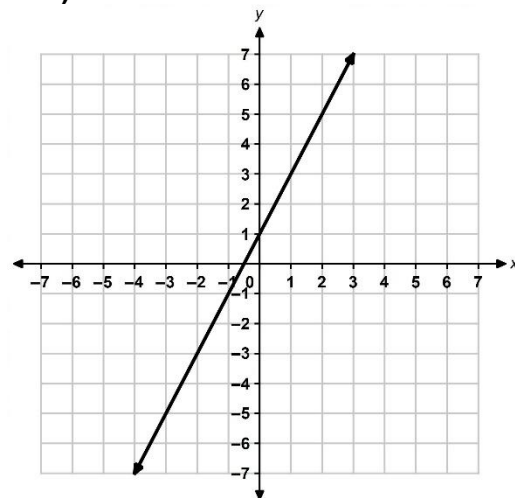
6. a)



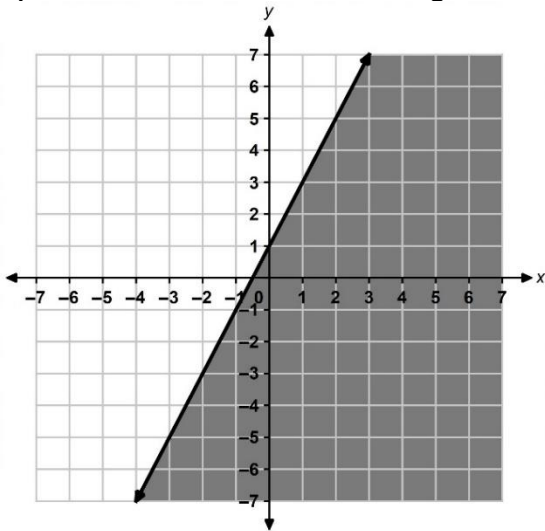
c) False, not included in the shading.



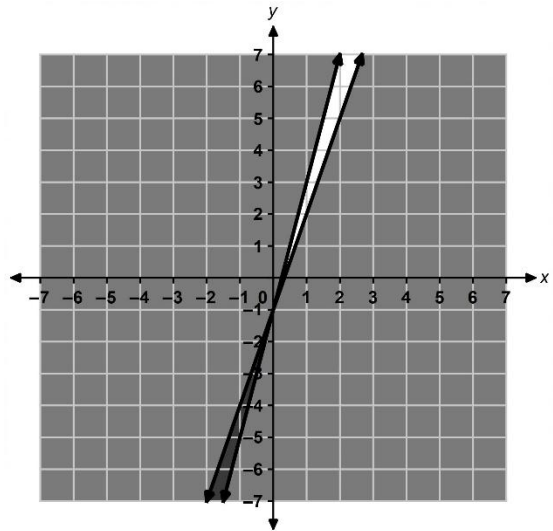
7. a)



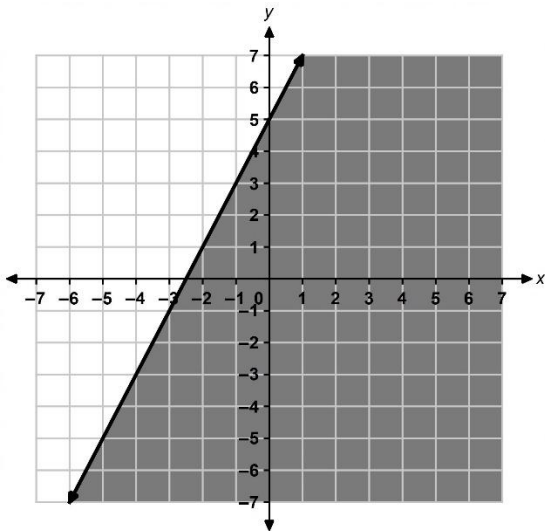
c) True, included in the shading.



10.

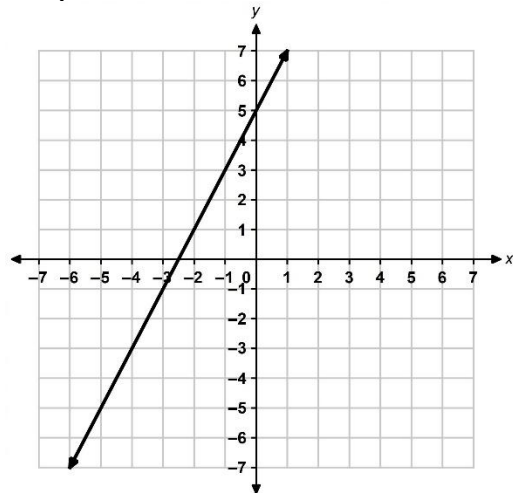


8.

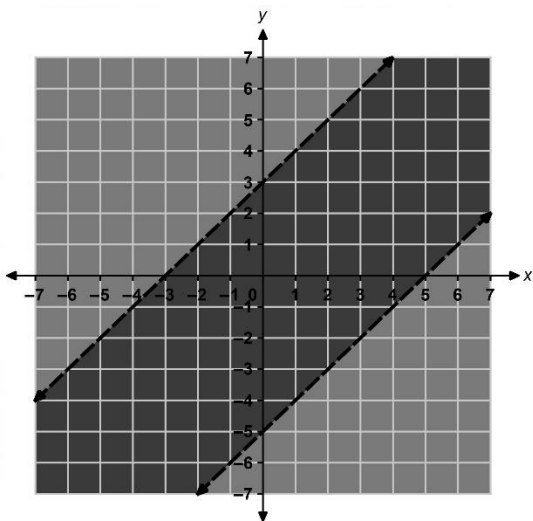


Self-Assessment – Chapter 3

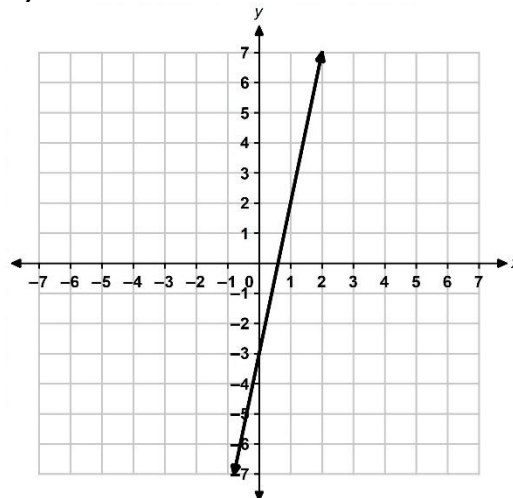
1. a)



9.

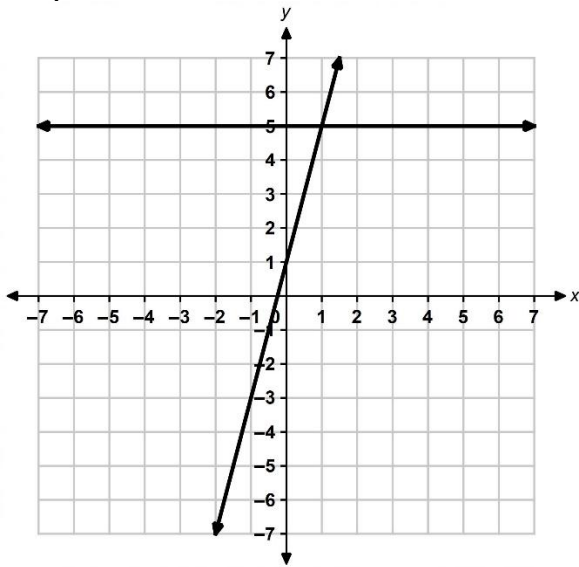


b)

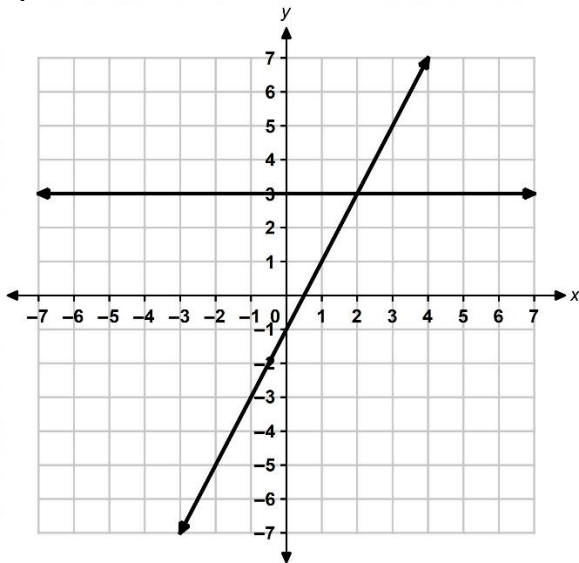


Answers

2. a)  $x = 1$

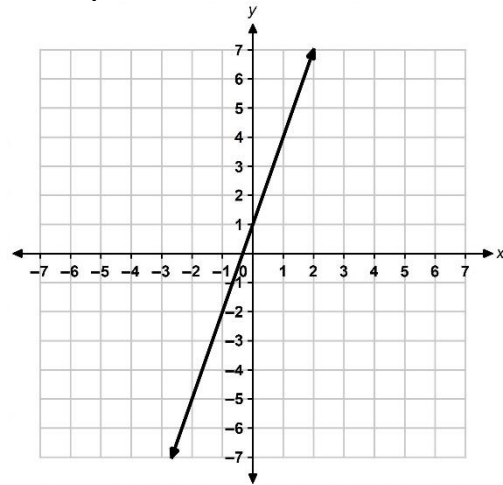


b)  $x = 2$

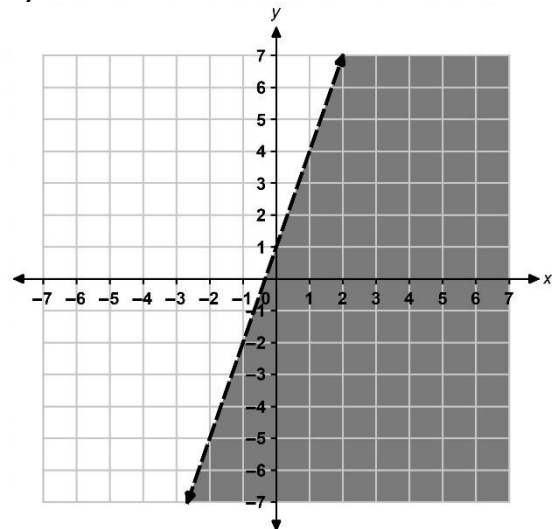


3. a)  $x = 3$    b)  $x = 3$    4. a)  $x = -5$    b)  $x = -8$   
 c)  $x = 31$    d)  $x = -5$    e)  $x = -8$    f)  $x = 4$   
 5. a)  $x = \frac{3}{5}$    b)  $x = \frac{3}{4}$    c)  $x = 1\frac{1}{20}$    d)  $x = \frac{3}{5}$   
 6. a)  $x = 22$    b)  $x = 28$    c)  $x = 9\frac{1}{4}$   
 d)  $x = 17\frac{1}{2}$    e)  $x = 6$    f)  $x = 1$    7. a)  $x < 4$   
 b)  $x > 5$    c)  $x \geq -1$    d)  $x \leq 3$

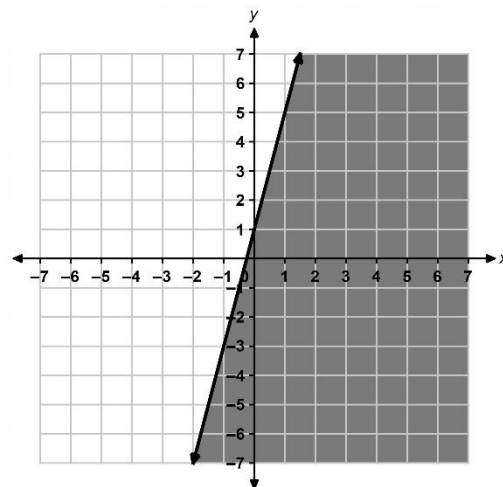
8. a-b)



c) True



9.



**Performance Task – Chapter 3**

- $500 + (15 \times 20) = \$800$
- $500 + (80 \times 15) = \$1,700$
- $C = 500 + 15(p - 20)$  4. 58 people
- Graph C. The cost is \$500 until there are more than 20 people.

**Chapter 4**

**Exercises 4.1**

- The area of the square of the hypotenuse equals the sum of the areas of the squares of the opposite sides. 2. Orlando is correct. 3. a) Right triangle b) Not a right triangle c) Right triangle d) Not a right triangle 4. a)  $289 \text{ cm}^2$  b)  $36 \text{ mm}^2$  5. a) 24 mm b) 15 cm c) 15 m 6. Torri is correct. 7. Paige is incorrect. It should be 2.23 in. 8. Paulo is incorrect. It should be 2.23 in. 9. Answers will vary.

**Exercises 4.2**

- a) 13 mm b) 24 in c) 10.6 mm d) 15 ft
- a) 11.3 cm b) 5.7 yd c) 85.4 m d) 63 mm
- 10.3 in 4. 9 ft 5. 16.2 yd

**Exercises 4.3**

- 127.3 ft 2. 248.7 m 3. 8.7 m
- 130 yds 5. 45.8 in 6. It is 0.4 miles shorter. 7. 24.1 ft 8. 4.9 ft

**Self-Assessment – Chapter 4**

- a) Not a right triangle b) Right triangle
- $2601 \text{ m}^2$  3. a) 95.6 in b) 67.1 cm c) 90.6 ft d) 158.7 mm 4. a) 15 miles b) 554.4 yd

**Performance Task – Chapter 4**

- Greg is 104.6 yd from the ball. Aspen is 100 yd from the ball.

**Chapter 5**

**Exercises 5.1**

- a)  $16 \div 4 - 9 = -5$  b)  $8 + 12 - 5 = 15$  c)  $9 \times 7 - 8 = 55$  d)  $15 \times 3 \div 5 = 9$

- e)  $22 - 12 - 19 = -9$  2. a) Correct b) Incorrect, 27 c) Correct d) Incorrect,  $9.\bar{3}$  e) Correct 3. a) -18 b) -22 c) -10 d) -8 4. a) -38 b) 10 c) -2

**Exercises 5.2**

1. a)

Input	Output
3	21
4	29
5	37

b)

Input	Output
6	45
7	53
9	69

c)

Input	Output
12	93
0	-3
8	61

d)

Input	Output
11	85
20	157
16	125

e)

Input	Output
-1	-11
-2	-19
-3	-27

f)

Input	Output
-5	-43
-9	-75
-7	-59

- Input, subtract 9, then add 2
- a) Input, times 2, then subtract 6 b)

Input	Output
5	4
-3	-12
8	10

- a) 12 b) 11 c) -17

**Exercises 5.3**

1. a)

Input	Output
x	
12	7
14	9
16	11

b)

Input	Output
x	
7	2
9	4
4	-1

c)

Input	Output
x	
-4	-9
-6	-11
-8	-13

Answers

2. a)

Input x	Output
3	2
4	5
5	8

b)

Input x	Output
12	29
10	23
8	17

3. a)

Input x	Output
1	7
42	89
83	171

b)

Input x	Output
-5	-5
-9	-13
-7	-9

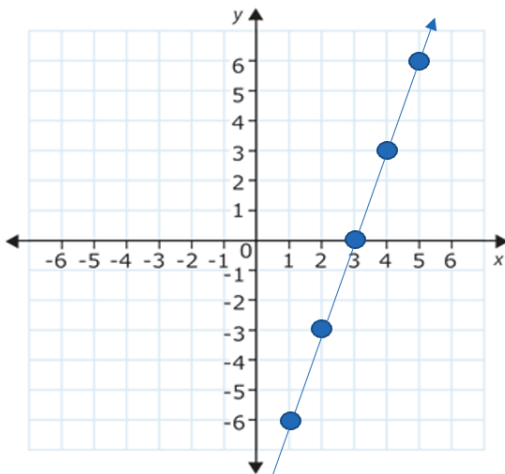
4. a)

Input x	Output
1	-6
2	-3
3	0
4	3
5	6

b)

Input x	Output
-1	-12
-2	-15
-3	-18
-4	-21
-5	-24

5.



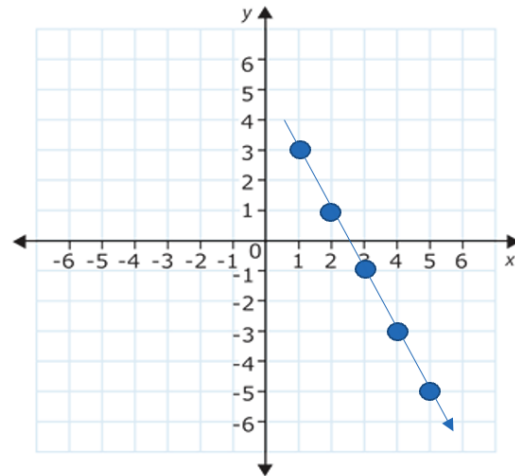
6. a)

Input x	Output
1	3
2	1
3	-1
4	-3
5	-5

b)

Input x	Output
-1	7
-2	9
-3	11
-4	13
-5	15

7.



Exercises 5.4

1. a) 5 b) 2 c)  $\frac{5}{2}$  or 2.5 2. a) 5 b) 4

c)  $\frac{5}{-2}$  or -2.5 3. a) 5 b) 5 c)  $\frac{5}{5}$  or 1

4. a) 4 b) 1 c)  $\frac{4}{1}$  or 4 5. a) 3 b) 3

c)  $\frac{3}{-3}$  or -1 6. a)  $\frac{1}{1}$  or 1 b)  $\frac{2}{1}$  or 2 c)  $\frac{2}{-1}$  or -2

d)  $\frac{2}{-3}$

Self-Assessment – Chapter 5

1. a) 0 b) -1 c) 2 d) 2.5

2. a) -10 b) -31 c) -19 d) -4

3. a)

Input x	Output
2	-4
-5	-18
7	6

b)  $x \times 2 - 8$

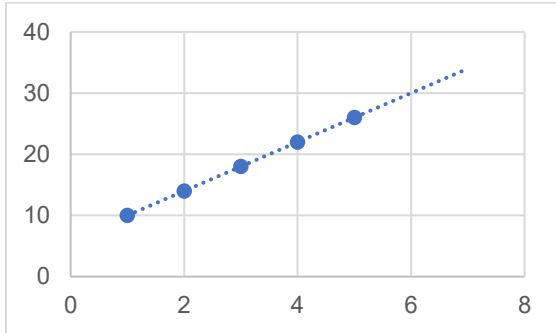
4. a)

Input x	Output
1	10
2	14
3	18
4	22
5	26

b)

Input x	Output
-1	2
-2	-2
-3	-6
-4	-10
-5	-14

5.



6.  $\frac{-4}{3}$

**Performance Task – Chapter 5**

1. a) Time; That is the variable.
  - b) Distance; That is the outcome.
  - c)  $60 \times 1, 60 \times 2, \text{etc.}$
2. a)

Input $x$	Output
1	60
2	120
3	180

- b)  $\frac{60}{1}$  or 60    c) Answers may vary.

**Chapter 6**

**Exercises 6.1**

1. a) Acute    b) Reflex    c) Right    d) Acute
- e) Straight    f) Obtuse    2. a)  $0^\circ$  to  $45^\circ$
- b)  $90^\circ$  to  $180^\circ$     c)  $0^\circ$  to  $45^\circ$     d)  $180^\circ$  to  $270^\circ$

**Exercises 6.2**

1.

Property	Trap	Par	Rhom	Rect	Squ
Opposite sides are parallel.	X	✓	✓	✓	✓
Opposite sides are equal.	X	✓	✓	✓	✓
All sides are equal.	X	X	✓	X	✓
Opposite angles are equal.	X	✓	✓	✓	✓

All angles are right angles.	X	X	X	✓	✓
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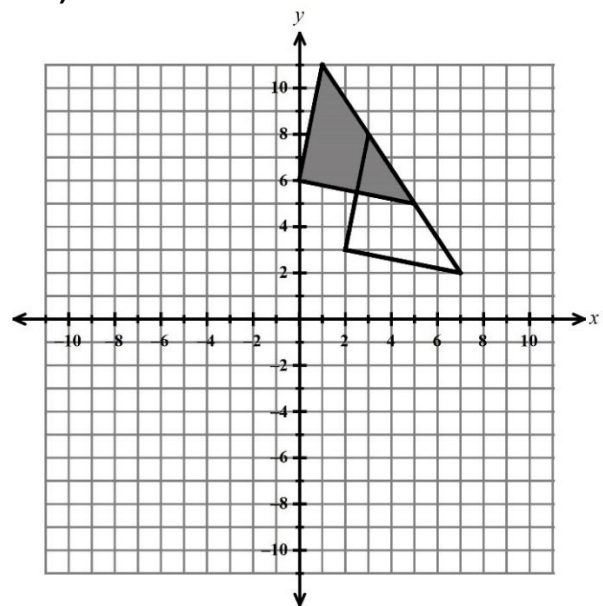
2. True    3. False    4. False    5. True
6. True    7. True    8. False    9. False
10. False

**Exercises 6.3**

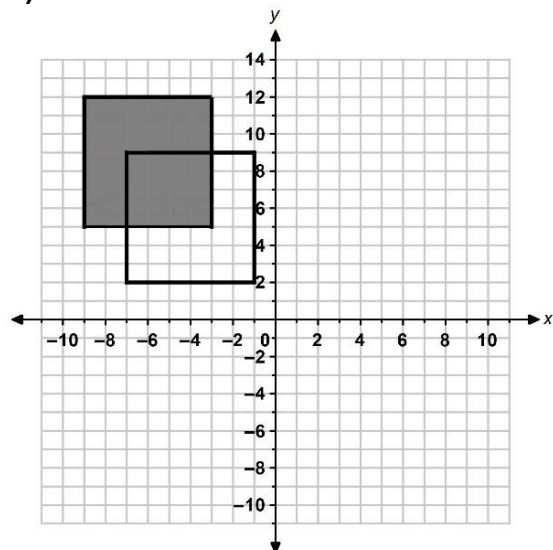
1. Not congruent    2. Congruent    3. Not congruent
4. Not congruent    5. Congruent
6. Not congruent    7. Congruent → B and H

**Exercises 6.4**

1. a)

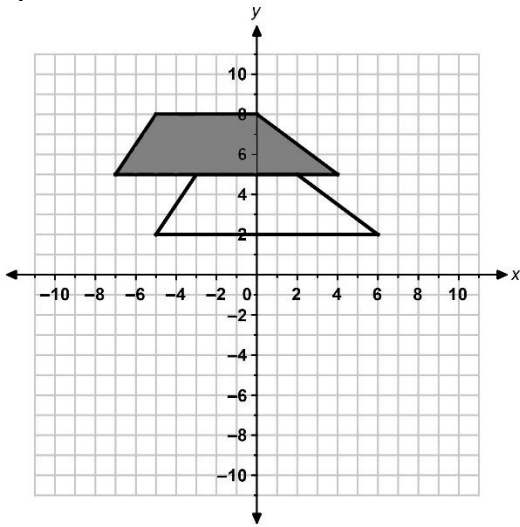


b)

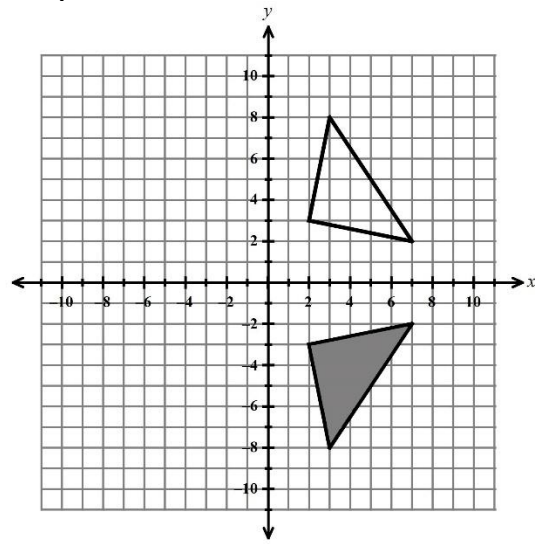


Answers

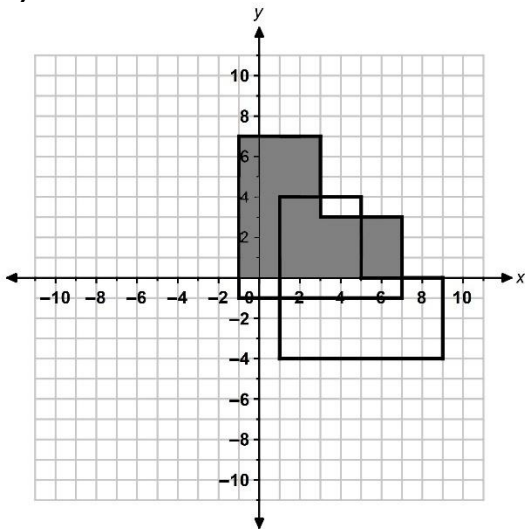
c)



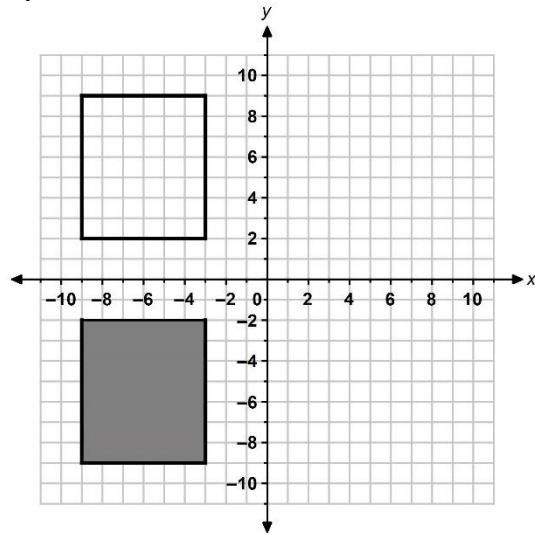
2. a)



d)



b)

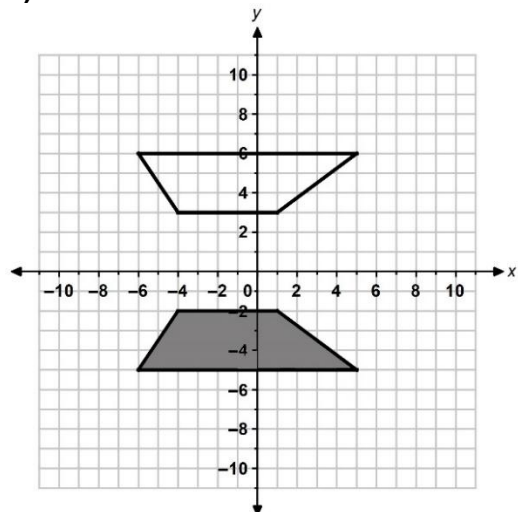


2. b)  $(x + 5, y + 2)$  c)  $(x - 7, y - 3)$   
 d)  $(x - 2, y + 4)$  3. a)  $(0, 6)$  b)  $(-2, 2)$   
 c)  $(2, 0)$  4. a)  $(x + 8, y - 6)$   
 b)  $(x - 5, y - 7)$

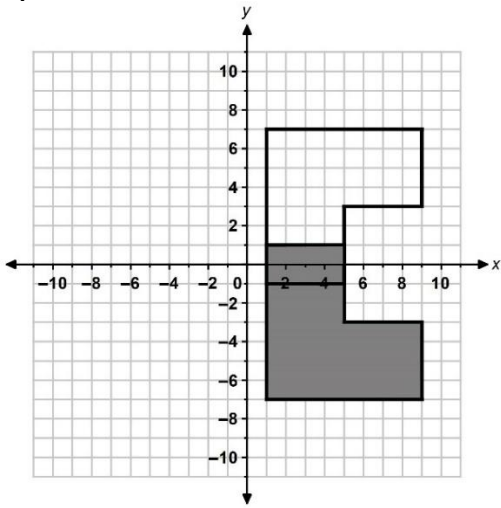
**Exercises 6.5**

1. Answers will vary.

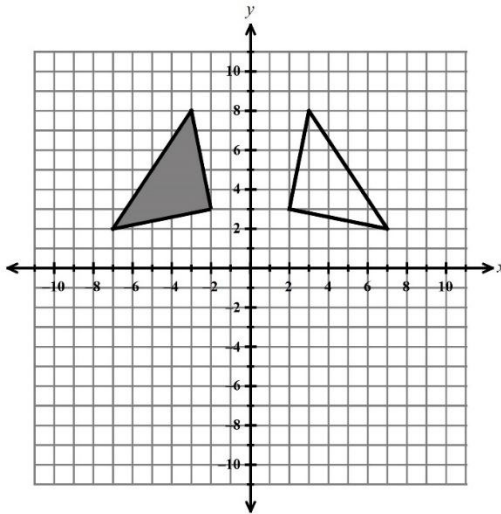
c)



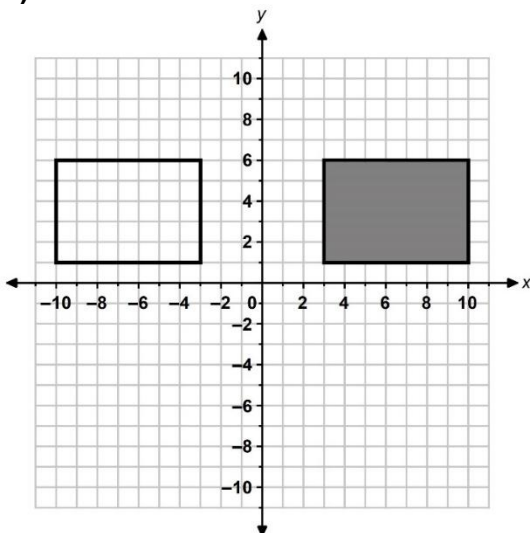
d)



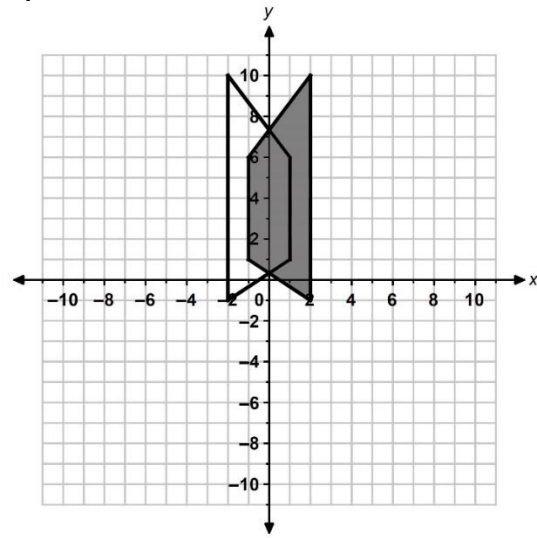
3. a) (5, -8) b) (-4, -7) c) (-3, 2)  
4. a)



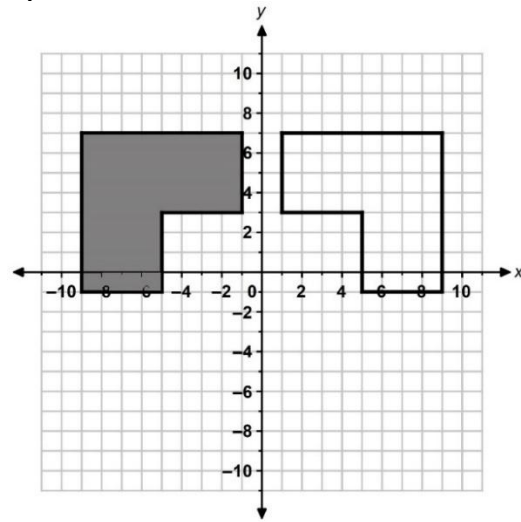
b)



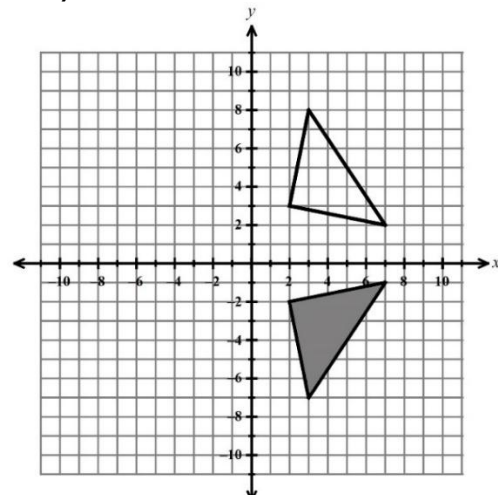
c)



d)

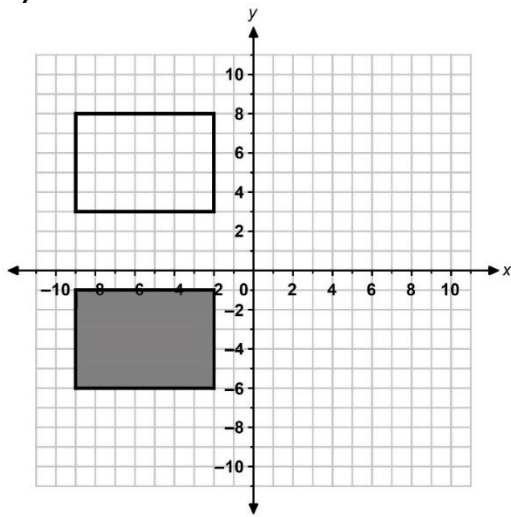


5. a) (-6, 5) b) (3, 6) c) (1, -5)  
6. a)

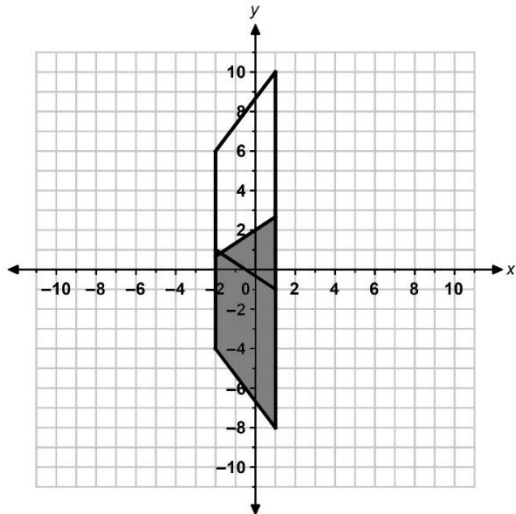


Answers

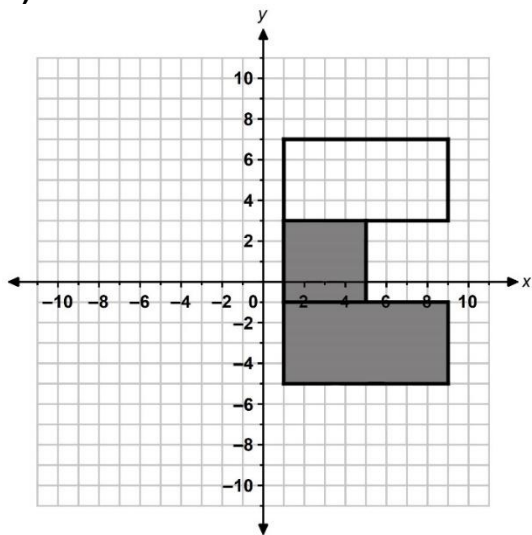
b)



c)



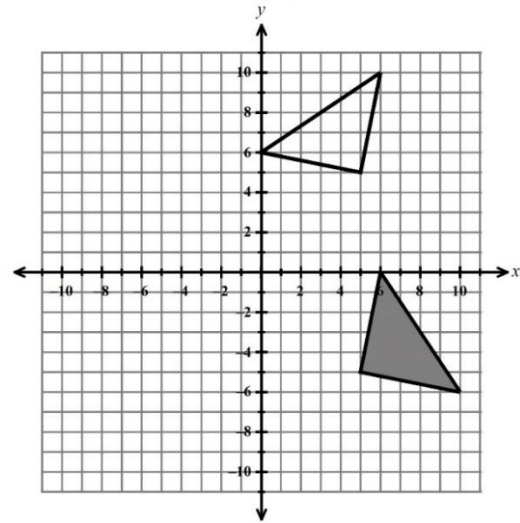
d)



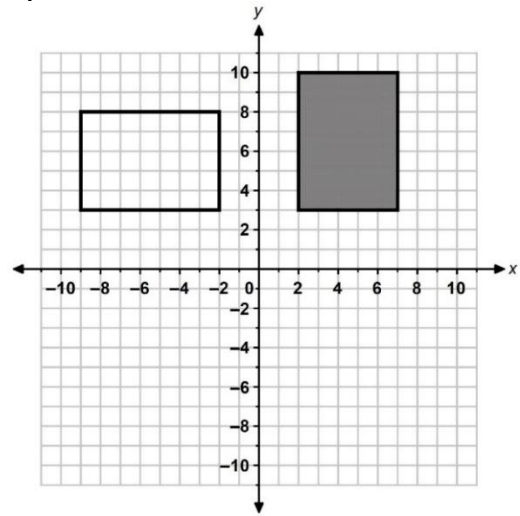
7. a) (4, -1) b) (-1, 0) c) (-3, 7)

Exercises 6.6

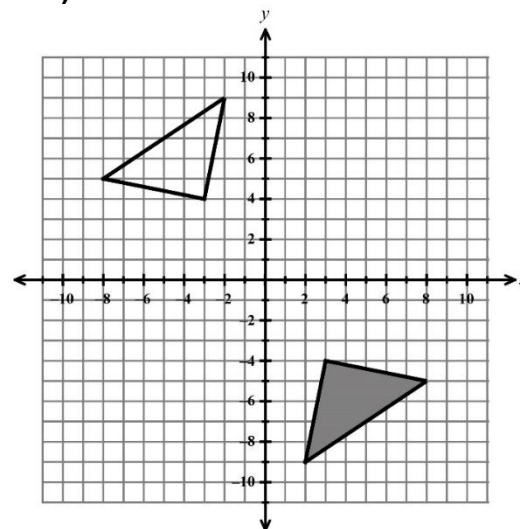
1. a)



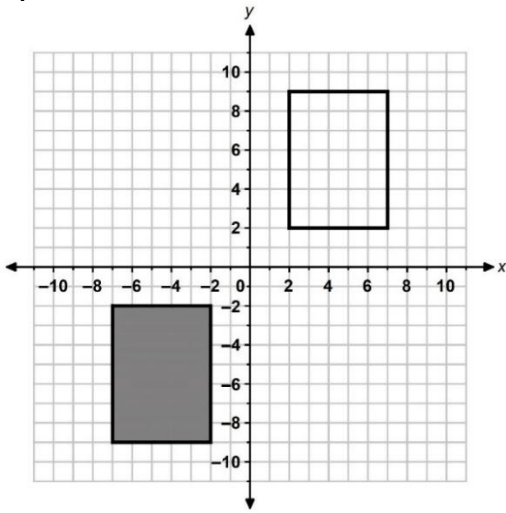
b)



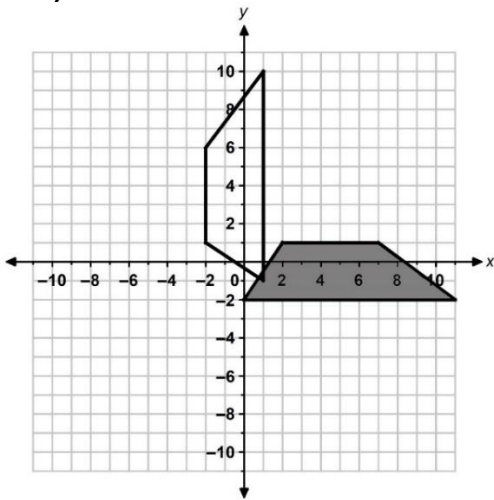
2. a)



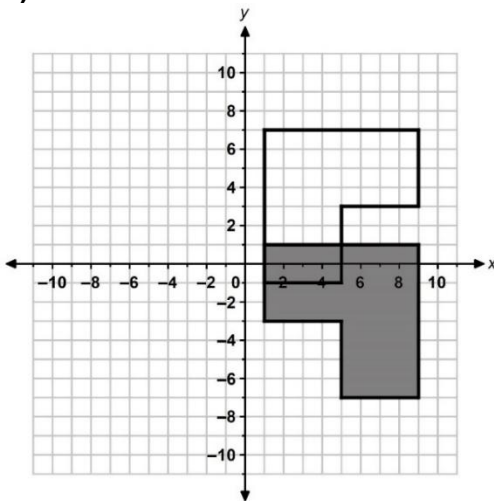
b)



3. a)



b)



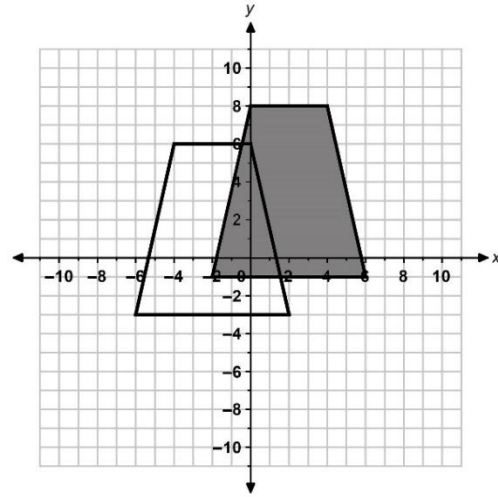
**Self-Assessment – Chapter 6**

1. a) Obtuse b) Reflex

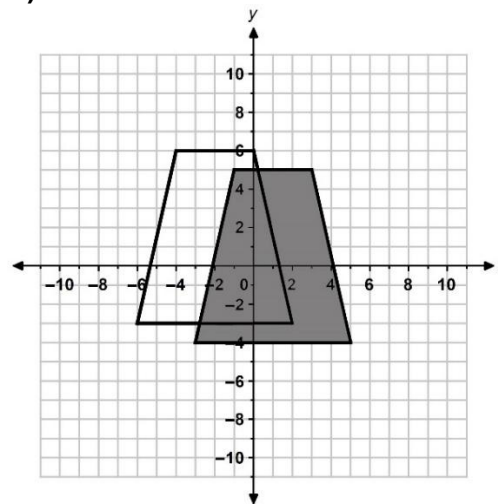
2. a) Rhombus b) Trapezoid

3. a) Not congruent b) Congruent

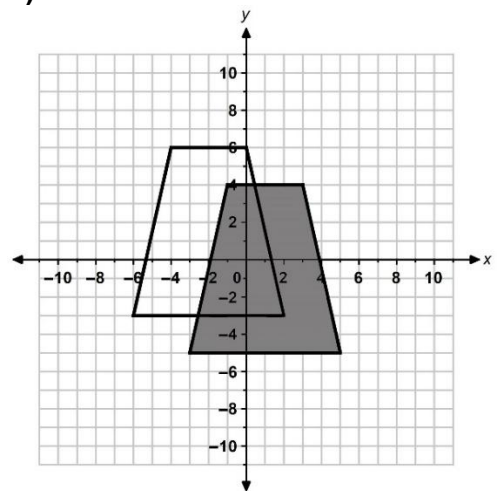
4. a)



b)

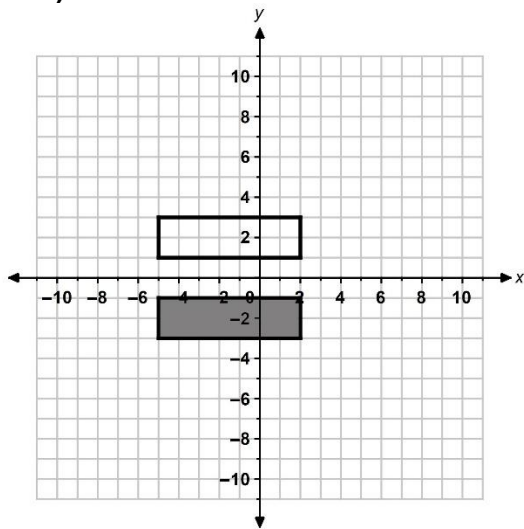


c)

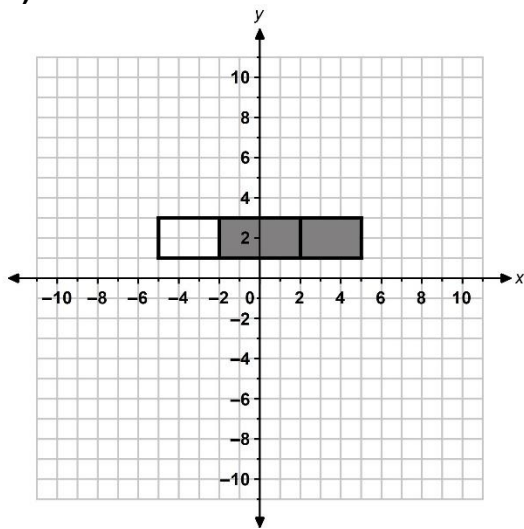


Answers

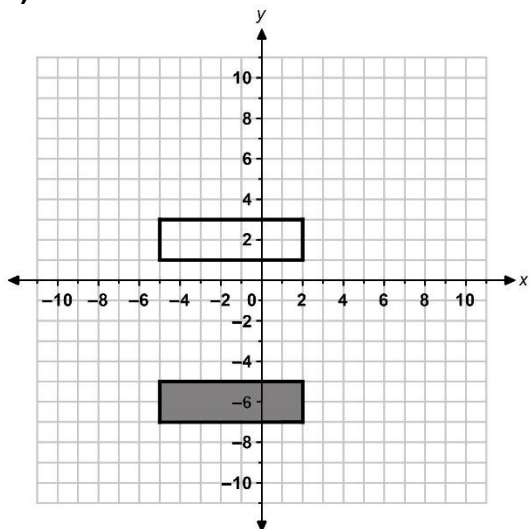
5. a)



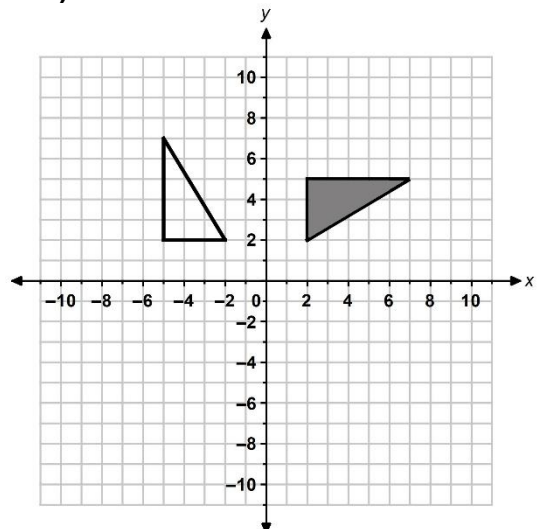
b)



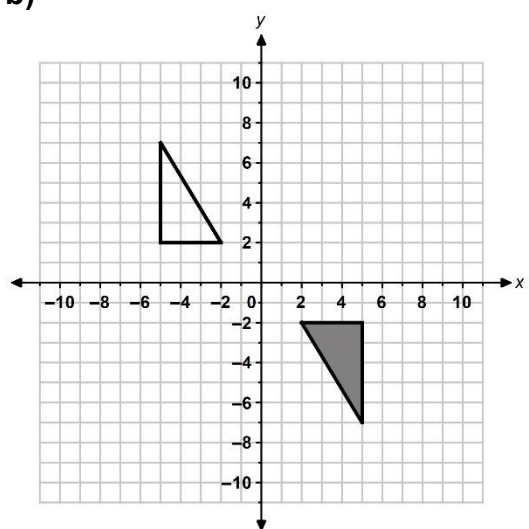
c)



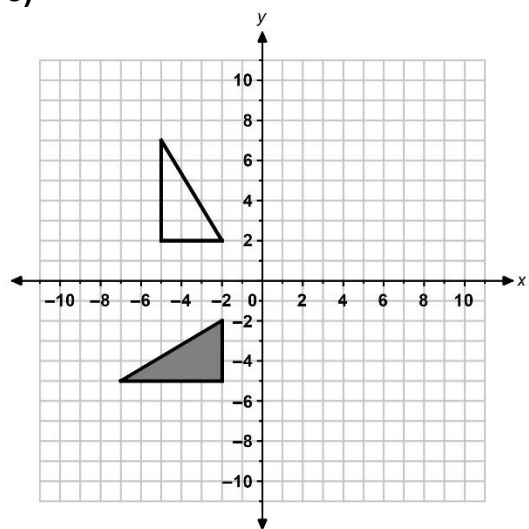
6. a)



b)



c)



**Performance Task – Chapter 6**

Answers will vary.

**Chapter 7**

**Exercises 7.1**

1. Surface Area = 280 cm<sup>2</sup>  
Volume = 300 cm<sup>3</sup>
2. Surface Area = 112 in<sup>2</sup>  
Volume = 64 in<sup>3</sup>
3. Surface Area = 118 ft<sup>2</sup>  
Volume = 70 ft<sup>3</sup>
4. Surface Area = 264 cm<sup>2</sup>  
Volume = 180 cm<sup>3</sup>
5. Surface Area = 528 cm<sup>2</sup>  
Volume = 480 cm<sup>3</sup>

**Exercises 7.2**

1. Surface Area = 87.9 m<sup>2</sup>  
Volume = 62.8 m<sup>3</sup>
2. Surface Area = 527.5 in<sup>2</sup>  
Volume = 904.3 in<sup>3</sup>
3. Surface Area = 1557.4 cm<sup>2</sup>  
Volume = 4622.1 cm<sup>3</sup>
4. Surface Area = 1406.7 in<sup>2</sup>  
Volume = 4019.2 in<sup>3</sup>
5. Surface Area = 753.6 in<sup>2</sup>  
Volume = 1582.6 in<sup>3</sup>
6. Surface Area = 70.7 yd<sup>2</sup>  
Volume = 39.3 in<sup>3</sup>

**Exercises 7.3**

1. Volume = 932.6 m<sup>3</sup>
2. Volume = 1282.2 cm<sup>3</sup>
3. Volume = 3165.1 ft<sup>3</sup>

**Exercises 7.4**

1. Volume = 1,436 mm<sup>3</sup>
2. Volume = 14,130 in<sup>3</sup>
3. Volume = 1.083 × 10<sup>12</sup> ft<sup>3</sup>
4. Volume = 2,756.9 in<sup>3</sup>

**Exercises 7.5**

1. Volume = 720 ft<sup>3</sup>
2. Volume = 19,440 ft<sup>3</sup>
3. Volume = 90 ft<sup>3</sup>

4. Volume = 10,500 ft<sup>3</sup>

5. Volume = 4.7 ft<sup>3</sup>

**Self-Assessment – Chapter 7**

1. Surface Area = 1600 yd<sup>2</sup>  
Volume = 3584 yd<sup>3</sup>
2. Surface Area = 1884 in<sup>2</sup>  
Volume = 6280 in<sup>3</sup>
3. Surface Area = 264 cm<sup>2</sup>  
Volume = 180 cm<sup>3</sup>
4. Volume = 3,692.6 in<sup>3</sup>
5. Volume = 38,772.7 yd<sup>3</sup>
6. Volume = 96,768 yd<sup>3</sup>

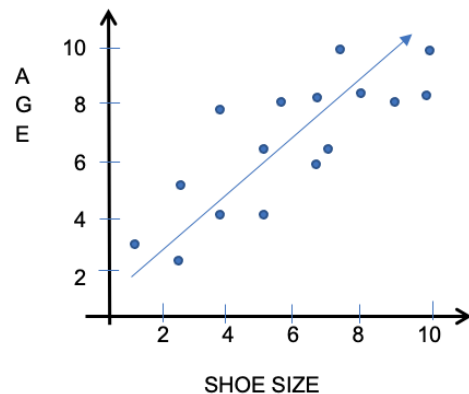
**Performance Task – Chapter 7**

1. Missing side = 5.7 cm
2. The cylinder

**Chapter 8**

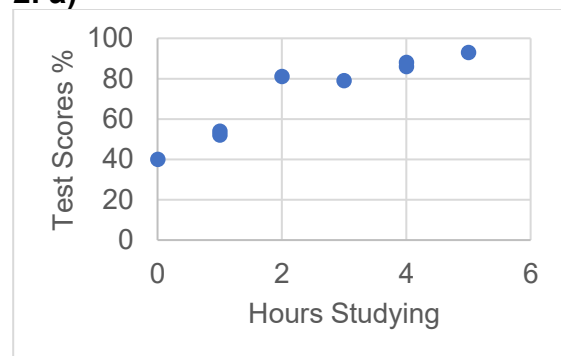
**Exercises 8.1**

1. a)



b) About a size 9    c) About a size 7

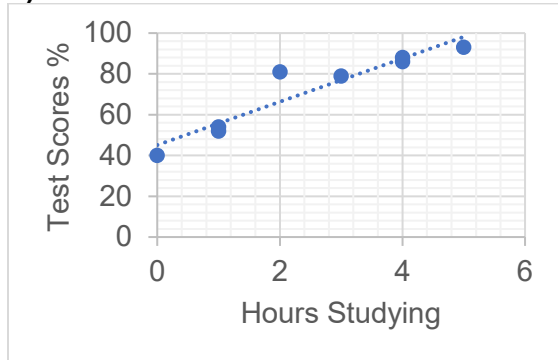
2. a)



Answers

b) Yes, more time studying results in higher test scores.

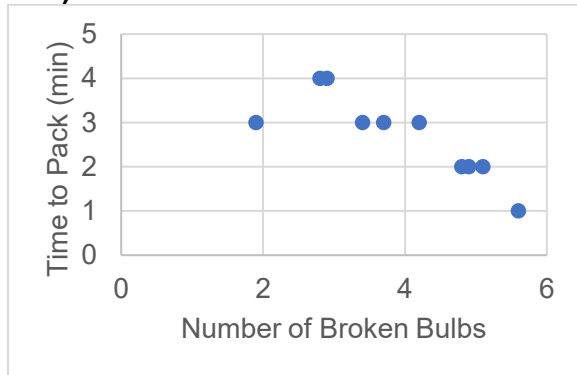
c)



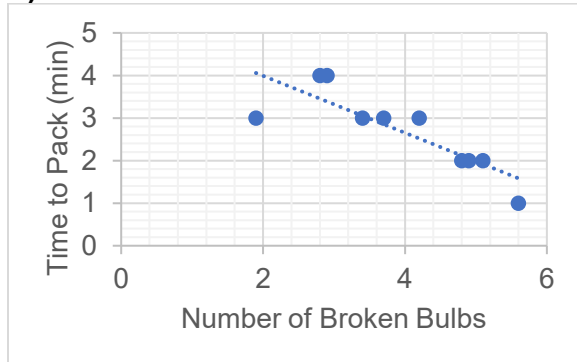
d) About 60% e) About 2 hours.

f) No, they are only predictions.

3. a)



b)



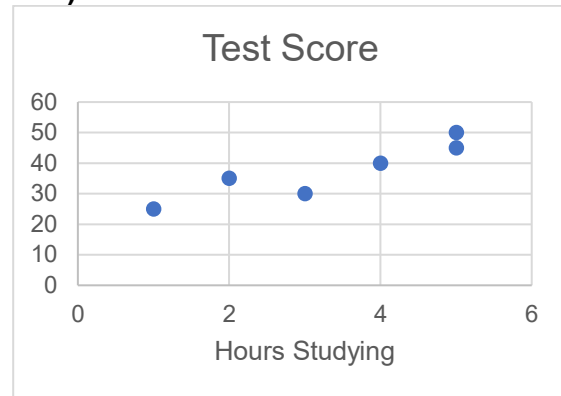
c) About 2 minutes d) Likely no broken bulbs.

Exercises 8.2

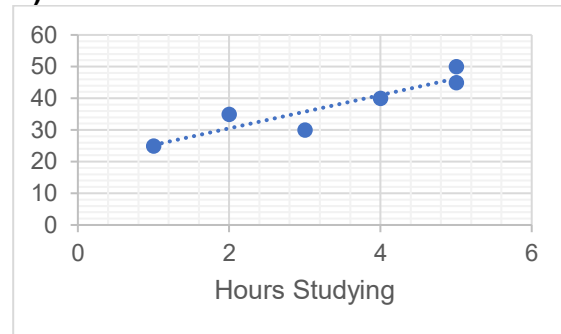
1. a) It passes through 2 ordered pairs.

b) (5, 20) and (15, 30) c)  $\frac{10}{10}$  or 1

2. a)

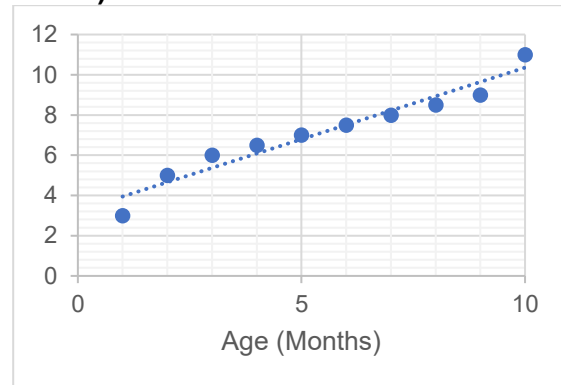


b)



c)  $y = 20$

3. a-b)



c) About 3 kg d)  $y = \frac{3}{4}x + 3$

4. a)  $y = 5x + 4$  b)  $y = -3x + 1$

c)  $y = -7x + 2$  d)  $y = -3x - 4$

5. a)  $y = \frac{3}{4}x + 1$  b)  $y = \frac{1}{2}x + 3$

c)  $y = -\frac{1}{2}x + 5$  d)  $y = -\frac{4}{7}x - 4$

Exercises 8.3

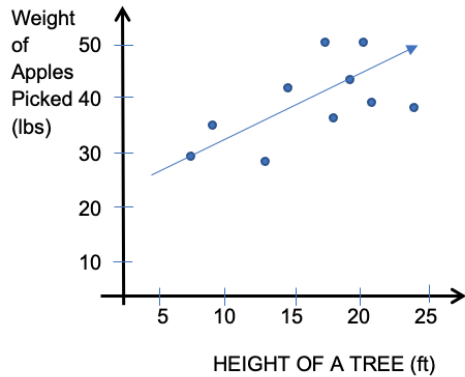
1. a)  $\frac{4}{1}$  or 4 b)  $\frac{0}{2}$  or 0 c)  $\frac{4}{2}$  or 2 d)  $\frac{15}{3}$  or 5

2. a)  $\frac{6}{2}$  or 3 b)  $\frac{2}{2}$  or 1 c)  $\frac{2}{4}$  or  $\frac{1}{2}$  d)  $\frac{2}{4}$  or  $\frac{1}{2}$

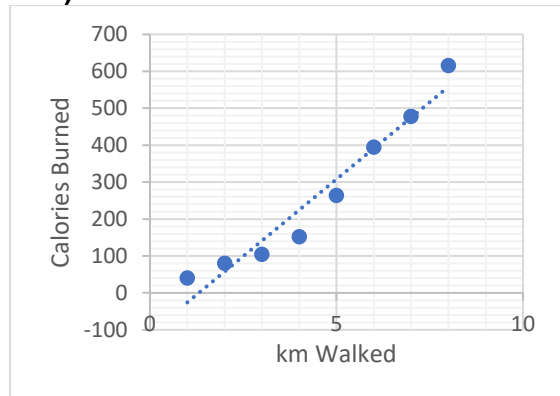
- e)  $\frac{4}{8}$  or  $\frac{1}{2}$  f)  $\frac{4}{6}$  or  $\frac{2}{3}$  3. a)  $y = 2x + 1$   
 b)  $y = 5x - 19$  c)  $y = 7x - 36$   
 d)  $y = -x + 8$  e)  $y = -8x + 6$   
 4. a)  $y = \frac{3}{2}x + \frac{3}{2}$  b)  $y = 2x - 9$   
 c)  $y = 3x - 3$  d)  $y = 2x + 6$   
 e)  $y = -x + 4$

**Exercises 8.4**

1. a)



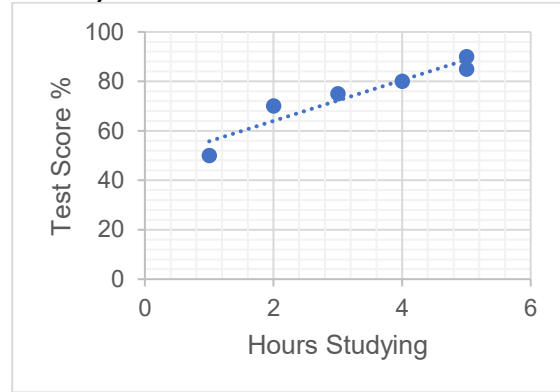
- b) (8, 30) and (20, 42) c)  $\frac{12}{12}$  or 1  
 d)  $y = x + 22$  2. a)  $y = 47$  b)  $x = 2$   
 3. a)  $y = \frac{1}{3}x + 2$  b) About  $4\frac{1}{3}$  hours  
 c) About 21 minutes  
 4. a)



- b) (6, 395) and (7, 478) c)  $y = 83x - 103$   
 d) 893 calories e) About 11.8 hours  
 5. 0 6. +1 7. -1 8. +1

**Self-Assessment – Chapter 8**

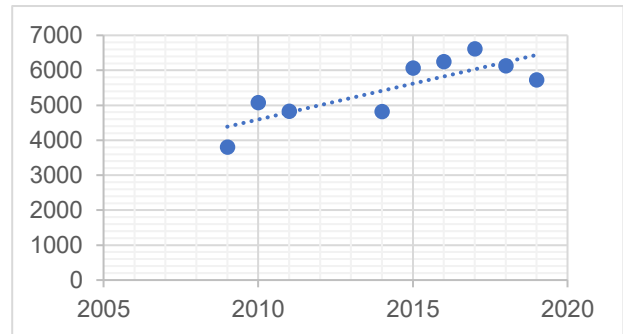
1. a-b)



- c) About 6 hours d) At least 1 hour  
 e) About 40% 2. a)  $y = 2x + 5$   
 b)  $y = 3x - 2$  c)  $y = -5x + 7$   
 d)  $y = \frac{3}{4}x + \frac{1}{4}$  3. a)  $y = 2x + 1$   
 b)  $y = -5x + 25$  4. a)  $y = 2x - 1$   
 b)  $y = 2x - 3$  c)  $y = x + 1$   
 d)  $y = 2x - 13$

**Performance Task – Chapter 8**

1. The population increases over time.  
 2.



3.  $y = \frac{1297}{7}x - \frac{2574429}{7}$  4. Roughly 16,690  
 5. Answers will vary.