Chapter 8 BLM Answers

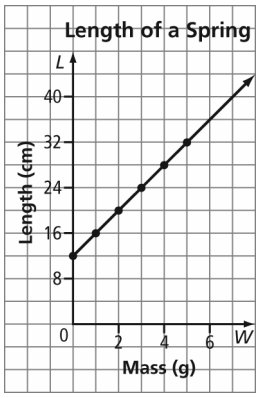
BLM 8–2 Chapter 8 Prerequisite Skills

1. a) Example:

w	*L*
0	12
1	16
2	20
3	24
4	28
5	32

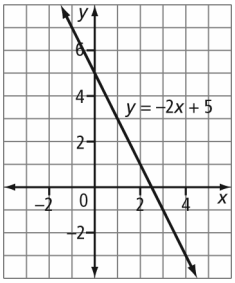
b) Example: Yes. The values of both the domain and range belong to the real numbers.

c) Example:

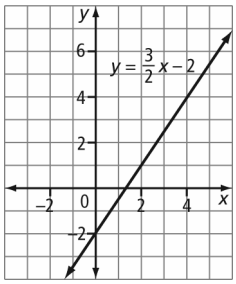


d) 22 cm **e)** 3.25 g

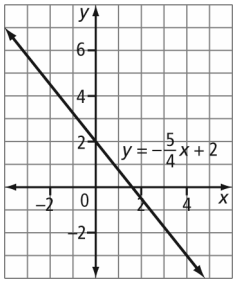
2. a)



b)



c)



3. a) T **b)** (3, 0) **c)** P and R

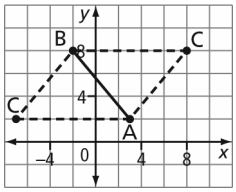
d) Several combinations are possible. Examples: PRT, QST, QSU, RST, RSU

e) 4 units

4. a) (3, 7). Example: The slope must be constant for these points to represent a linear relation. The slope between the first two points, (1, 1) and (2, 4), is 3. So, the top point should be up 3 and to the right 1. The point must be located at (3, 7).

b) (1, –1)

5. Example:



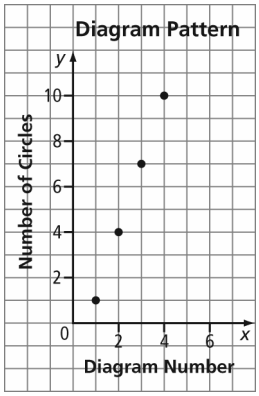
(–7, 2) and (8, 8)

6. a) Example: The pattern starts with one circle. To create each subsequent diagram, a row of three circles is added.

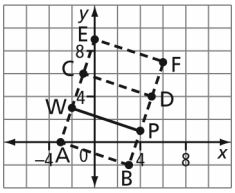
b)

Diagram Number	Number of Circles
1	1
2	4
3	7
4	10

c)

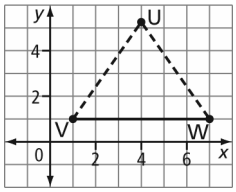


7. Example:



Rectangles ABPW, PWCD, and PWEF

8. a) Example:



b) Example: The x-coordinate of point U is 4. If U is in quadrant I, the y-coordinate is positive and has a value between 6 and 7. If U is in quadrant IV, the y-coordinate is negative.

BLM 8–3 Chapter 8 Warm-Up

Section 8.1

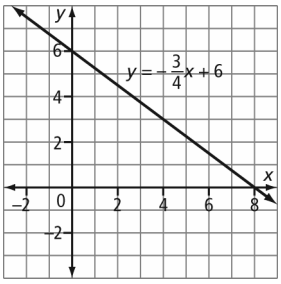
1. B

2. (–4, 3); $2x + y = 5$

Left Side	Right Side
$2x + y$	5
$= 2(–4) + 3$	
$= –8 + 3$	
$= –5$	

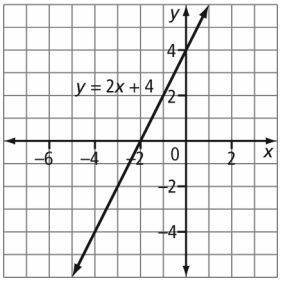
Left Side ≠ Right Side

3.



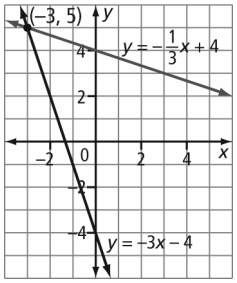
4. $y = \frac{3}{5}x - 6$; slope $\frac{3}{5}$, y-intercept –6

5.

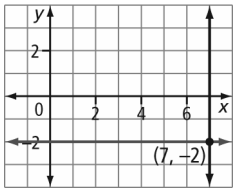


Section 8.2

1.



2.



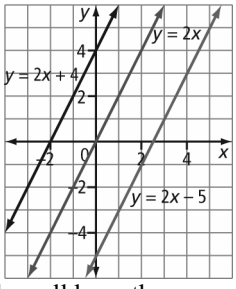
3. a) $2x + 3$ **b)** $x - 7$ **c)** $3x - \frac{1}{2}x$ or $3x - 0.5x$

4. a) 12 ft/min **b)** 3 **c)** \$0.07/min

5. a) 0 km **b)** \$0 **c)** \$500

Section 8.3

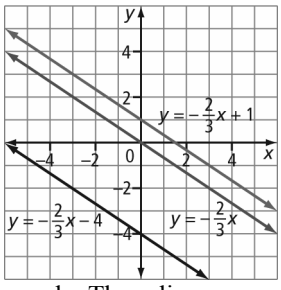
1. a)



b) They all have the same slope.

c) No

2. a)



b) Example: These lines are parallel, because they all have the same slope.

c) Example: $y = 2x + 1$

3. a) 1, 2, 3, 4 **b)** –2, –1, 0, 1

c) –6, –5, –4, –3, –2

4. Example: 0.1, 0.2, 0.4, 0.7, 0.95

5. Example: There are an infinite number of real numbers between 0 and 1.

BLM 8–5 Section 8.1 Extra Practice

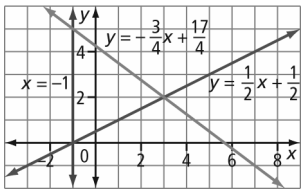
1. a) (2, 7) **b)** (1, 3) **c)** (–3, 1)
d) (1.5, 1) **e)** (–1, –1)

2. a) (–4, 5) **b)** (4, –5)

3. a) No **b)** Yes **c)** Yes **d)** No

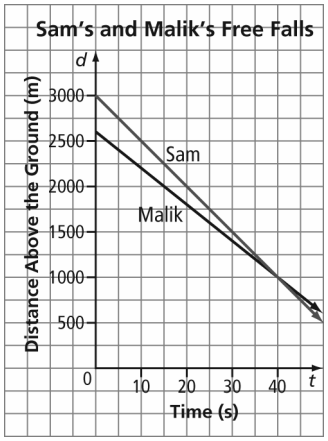
4. 14

5. a)



b) (–1, 5), (3, 2), and (–1, 0)

6. a)



b) (40, 1000)

c) At 40 s they are both 1000 m above the ground.

7. wind: 55 km/h, plane: 365 km/h

BLM 8–6 Section 8.2 Extra Practice

1. a) Let x represent the small number. Let y represent the large number. The equations $x + y = 42$ and $y = x + 8$ form a linear system.

b) Let x represent Jim's mass, in kilograms. Let y represent Terry's mass, in kilograms. The equations $x = y - 10$ and $y + x = 105$ form a linear system.

c) Let x represent the number of nickels. Let y represent the number of dimes. The equations $5x + 10y = 375$ and $3y = x$ form a linear system.

d) Let x represent the price of a pen, in dollars. Let y represent the price of a notebook, in dollars. The equations $3x + 3y = 6.90$ and $2y + x = 4.10$ form a linear system.

2. a) Let x represent the amount invested at 8%, in dollars. Let y represent the amount invested at 10%, in dollars. The equations $0.08x + 0.10y = 496$ and $x + y = 5200$ form a linear system.

b) Let x represent the first part. Let y represent the second part. The equations $x + y = 12$ and $2x + 3y = 29$ form a linear system.

3. 0.75 km

4. Example: Option 2 is better for sales from \$0 to less than \$6250. For sales of \$6250, the two payment options are equal. Option 1 is better for sales over \$6250.

5. Gabriel will overtake Sakura in 100 s at a distance of 350 m.

6. 42 nickels, 33 dimes

7. 375 adult tickets, 125 child tickets

8. wind: 50 km/h, plane: 550 km/h

9. flat fee: \$22.50, charge per kilometre: \$0.09

BLM 8–7 Section 8.3 Extra Practice

1. a) One solution. The equations have different slopes.

b) Infinite number of solutions. Both equations have the same slope and y-intercept.

c) No solution. The equations have the same slope and different y-intercepts.

2. a) One solution. The equations have different slopes.

b) No solution. The equations have the same slope and different y-intercepts.

c) Infinite number of solutions. Both equations have the same slope and y-intercept.

3. a) $b \neq 4$ **b)** not possible **c)** $b = 4$

4. a) not possible **b)** $m \neq -2$ **c)** $m = -2$

5. a) $m = 4$, $b \neq -1$

b) $m \neq 4$, b is a real number

c) $m = -4$, $b = -1$

6. a) $C \neq 12$ **b)** not possible **c)** $C = 12$

7. i) A and B, B and C
ii) A and D, B and D, C and D
iii) A and C

BLM 8–8 Chapter 8 Test

1. C **2.** A **3.** D **4.** B **5.** 9 **6.** 10.1

7. 21 **8.** (–2, –9)

9. a) The given point is the x-intercept of the first line.

b) The given point lies on the second line.

c) The given point is the y-intercept of both lines as well as the point of intersection.

10. a) (–6, –5) **b)** infinite number of solutions

c) (4, –11)

11. a) Let s represent Shirley's age, in years. Let a represent Aaron's age, in years. The equations $s - a = 6$ and $\frac{1}{2}s = a - 2$ form a linear system.

b) Age cannot be less than 0.

c) Shirley is 16 years old and Aaron is 10 years old.

12. a) (17.2, 603.4) **b)** 18 books