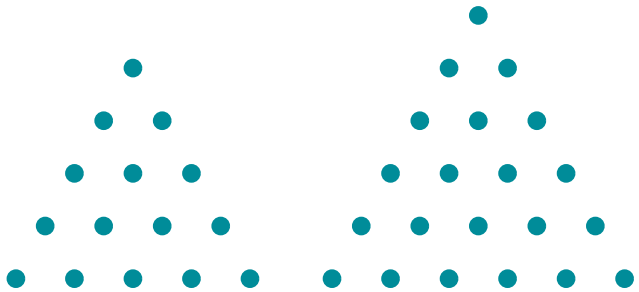
Answers to Course 3 Unit 2 Practice

LESSON 9-1

1. **Figure 5** **Figure 6**



2.

Figure Number	Number of Dots
1	1
2	3
3	6
4	10
5	15
6	21
7	28

3. B

4. $\frac{n(n+1)}{2}$

5. B

LESSON 9-2

6. 10, 19, 28

7. **Figure 4**

Figure 5

8. 82 units; The perimeter is 10 units for the first figure and add 8 units more for each additional figure (since perimeter is the distance around the outside of a figure).

9. D

10. A

LESSON 10-1

11. -11

12. C

13. 15.75

14. **a.** Inverse operations; subtract 9 from each side

b. Inverse operations; divide by 5 on both sides.

15. D

LESSON 10-2

16. A

17. $x \geq 1$

18. 23, 49 and 92

19. B

20. 14 feet, 70 feet and 91 feet

LESSON 11-1

21. slope $= 3$; y-intercept $= -2$

22. slope $= -2$; y-intercept $= 3$; explanations may vary: slope: for every unit increase in x, y decreases by 2; y-interecept: when $x = 0$, $y = 3$.

23. a. 60

b. 0

c. $D = 60w$

d. \$1560

24. D

25. B

LESSON 11-2

26. D

27. a. $\frac{36}{3} = 12$

b. 84 miles

c. 4.5 hours

d. Terrence finished first. Terrence rides 12 miles in 1 hour. Natalie rides 10.5 miles in 1 hour.

28. a. Cassie: $y = 12 + 8x$; Margo: $y = 9x$

b. Cassie earns \$8 per hour so her slope is 8. She also earns \$12 to start, so her y-intercept is 12. The slope of Margo's line is 9, meaning she earns \$9 per hour. Margo's y-intercept is 0, so she does not have a starting amount.

c. Cassie earns more: $12 + 8(7) = \$68$; Margo $= 9(7) = \$63$.

29. B

30. a.

Number of Hours	0	1	2	3	4	5
Total Cost	4	6	8	10	12	14

b. The data are linear because the cost increases at a constant rate.

c. The slope is 2 and the y-intercept is 4.

d. $y = 4 + 2h$

LESSON 12-1

31. A

32. $y = -4x$; slope: -4; y-intercept: 0

33. a. $y = 10 + 4x$

b. slope $= 4$; y-intercept $= 10$

34. C

35. B

LESSON 12-2

36. B

37. Graph A is steeper. Graph A has a slope of 4 and Graph B has a slope of 2. Since $4 > 2$, the line on the left is steeper.

38. C

39. The equation has a greater rate of change. The rate of change of the data shown in the table is 2. The slope of the linear equation shown is 4.

40. a. slopes are $\frac{2}{3}$, 1 and 3

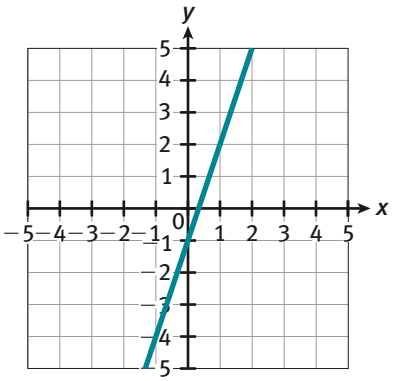
b. $y = 3x - 1$

LESSON 12-3

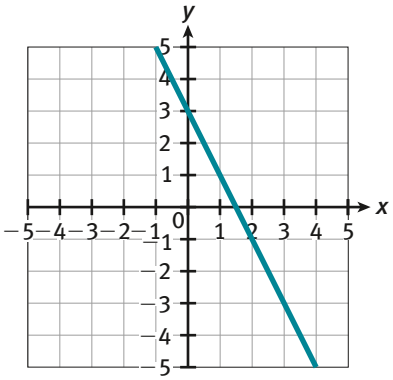
41. slope $= -5$; y-intercept $(0, 3)$

42. B

43. a.



b.

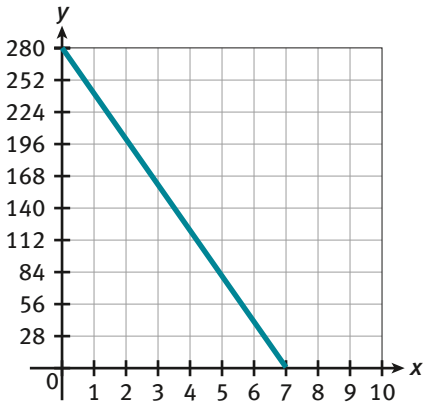


44. A

45. a.

x (days)	0	1	2	3	4	5	6
y (pages)	280	240	200	160	120	80	40

b.



c. $y = 280 - 40x$

d. The slope is -40 and the y-intercept is $(0, 280)$.

LESSON 13-1

46. Archery Club

Lessons	1	2	3	4
Cost ($)	8	16	24	32

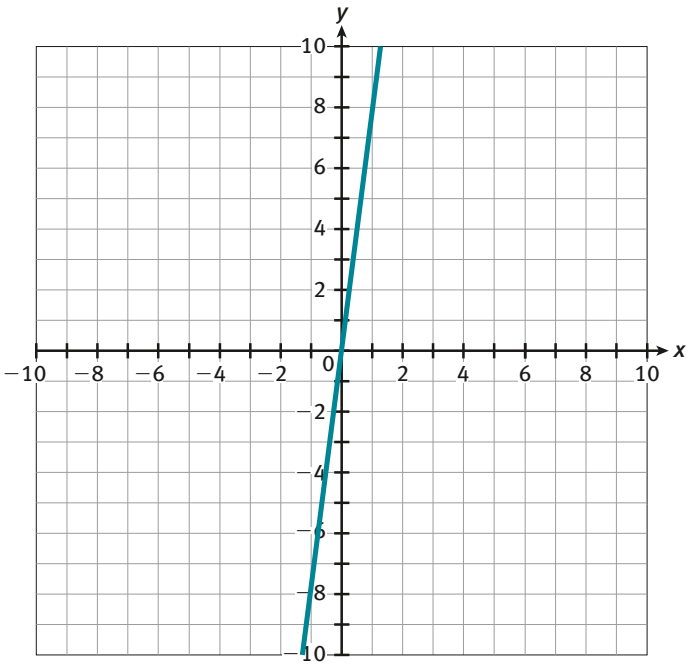
Recreation Center

Lessons	1	2	3	4
Cost ($)	19	23	27	31

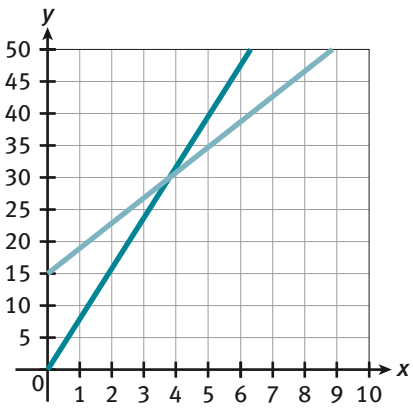
47. a. $y = 8x$

b. $y = 15 + 4x$

48. a.



b.



49. a. A

b. B

50. It will be cheapest for Jermaine to take his archery classes at the archery club if he takes less than 4 classes. If he will take more than four classes he should take them at the recreation center.

LESSON 13-2

51. a. Yes, if the number of weeks are doubled, the number of miles she swims will be doubled as well.

b. No, the equation for this situation is $y = 0.50x + 5$. This is not in the form $y = kx$.

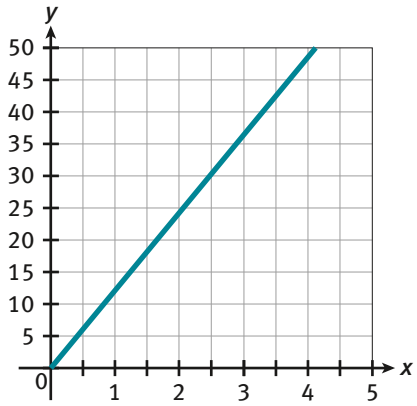
c. No, the equation cannot be written in the form $y = kx$.

52. Aida; this is not a direct proportion. The graph does not pass through the origin.

53. C

54. a.

Time	1	2	3	4
Distance	12	24	36	48



b. $y = 12x$

c. Yes, the equation is written in the form $y = kx$.

d. 2.18 hours

55. C

LESSON 14-1

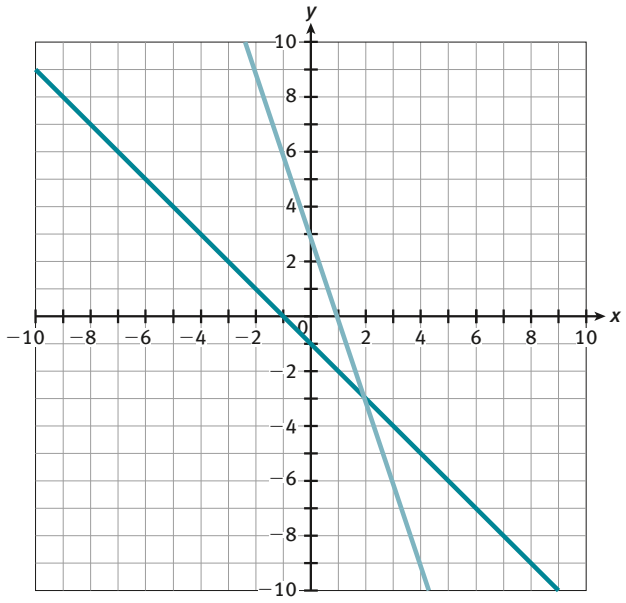
56. D

57. Answers will vary. Sample answer given.

x	y_1	y_2
−2	−12	−9
−1	−9	−7
0	−6	−5
1	−3	−3
2	0	−1
3	3	1

The solution is (1, −3).

58. The y-values are the same at $x = 2$.



59. A

60. **a.** $K = 6w + 4$

b. $E = 5w + 12$

c. Week 8; Explanations will vary but should note that when $w = 8$, both accounts will have \$52.

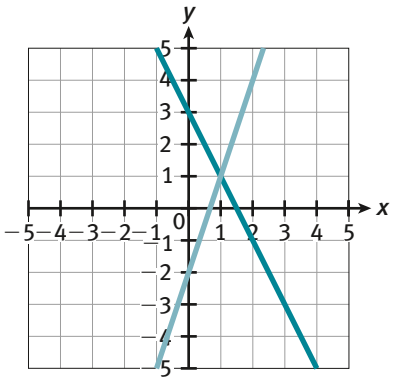
LESSON 14-2

61. C

62. **a.** No solution; Explanations will vary; the equations are the same except for the constant term, and no two numbers can add up to both 6 and 12; the equations have the same slope and different y-intercepts so they are parallel lines.

b. There are infinitely many solutions; Explanations will vary; these are equivalent equations—if you solve the first equation for y, you get the second equation.

63. (1, 1)



64. D

65. (1, 2); explanations will vary; a table of values shows that at $x = 1$, both y-values are 2.

LESSON 15-1

66. B

67. $(-3, 5)$

68. D

69. Sample answer: If the substitution method results in an equation that is always true, the equations would be the same line.

70. Answers will vary; Sample answer:

$$2x - 3y = 18$$
$$-x + y = -7$$

For each equation, I selected coefficients for x and y. Then, I substituted the value of 3 for x and the value of -4 for y, and evaluated the sum on the right side of each equation.

LESSON 15-2

71. bagels = $9; cream cheese = $4.50

72. C

73. 41 quarters and 34 dimes

74. B

75. adult ticket = $11; child ticket = $5