

3.1 & 3.2

$$25. \begin{cases} 3 = 4y + x \\ 4y = -x + 3 \end{cases}$$

$$3 - x = 4y$$

$$\begin{aligned} \frac{3}{4} - \frac{x}{4} &= y \\ -\frac{x}{4} + \frac{3}{4} &= y \end{aligned}$$

same line
infinite soln's
dependent
Graph paper

37. bank $y = 3 + \frac{2}{3}x$
 $y = 9$

$$(1.4 = \frac{2}{3})$$

$$(15, 9)$$

12 < 15 so the cost will be less than \$9 for 12 bills. Use the local bank

8. $\begin{cases} t = 2r + 3 \\ 5r - 4t = 6 \end{cases}$

$$5r - 4(2r + 3) = 6$$

$$5r - 8r - 12 = 6$$

$$-3r - 12 = 6$$

$$-3r = 18$$

$$r = -6$$

$$t = 2(-6) + 3$$

$$t = -12 + 3$$

$$t = -9$$

$$(-6, -9)$$

22. $\begin{cases} 2w + 5y = -24 \\ 3w - 5y = 14 \end{cases}$

$$5w = -10$$

$$w = -2$$

$$2(-2) + 5y = -24$$

$$-4 + 5y = -24$$

$$5y = -20$$

$$y = -4$$

$$(-2, -4)$$

46. $\begin{cases} 7x + 2y = -8 \\ 8y = 4x \end{cases}$

$$\rightarrow \begin{cases} 7x + 2y = -8 \\ -4x + 8y = 0 \end{cases}$$

$$\rightarrow \begin{cases} -28x - 8y = 32 \\ -4x + 8y = 0 \end{cases}$$

$$-32x = 32$$

$$x = -1$$

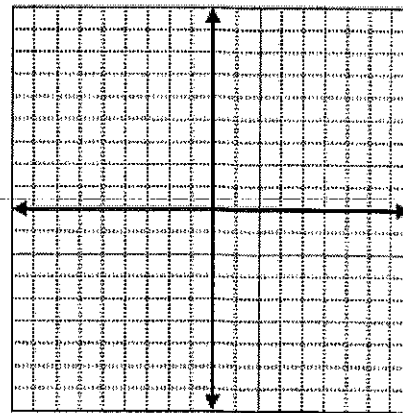
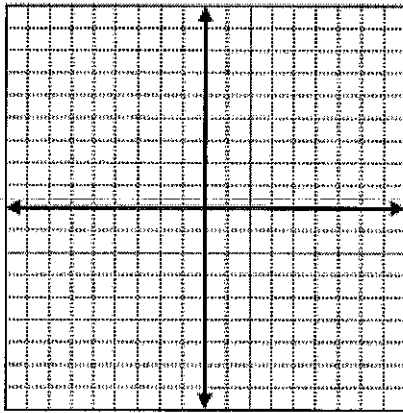
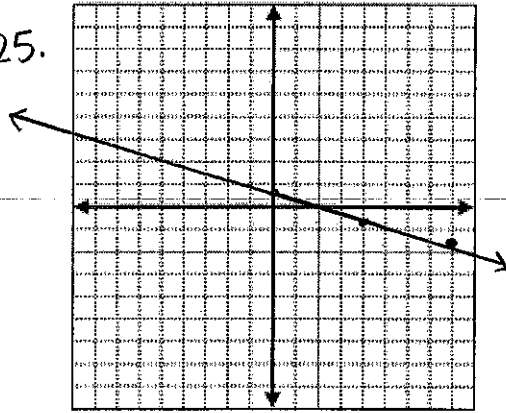
$$8y = 4(-1)$$

$$8y = -4$$

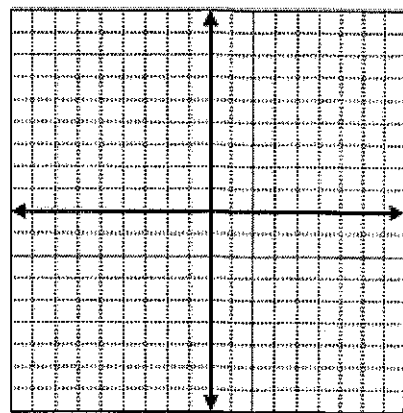
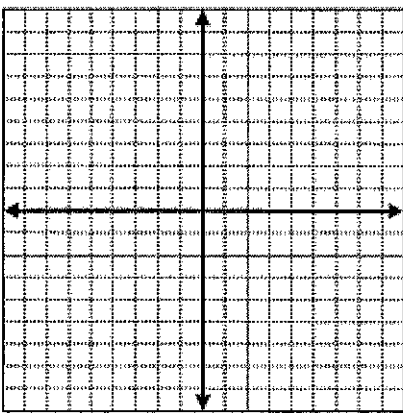
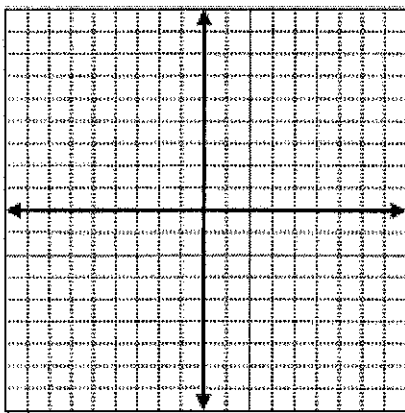
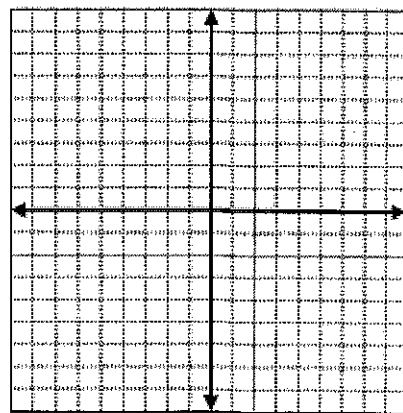
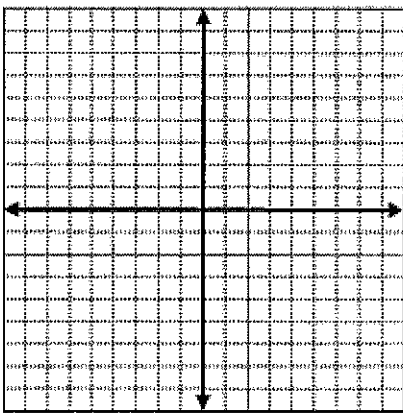
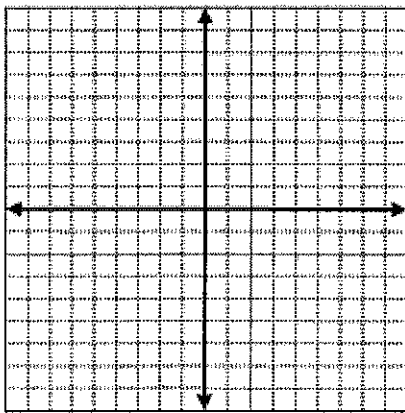
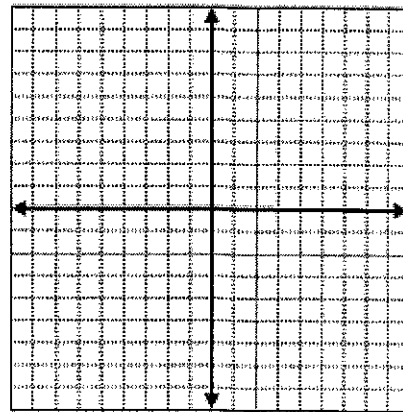
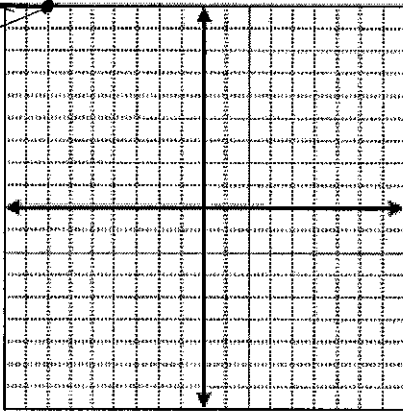
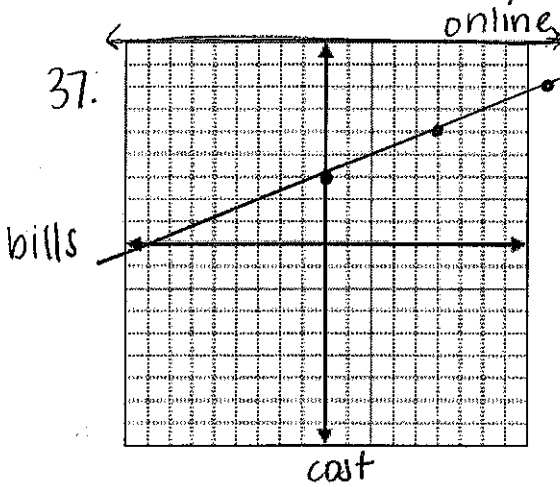
$$y = -\frac{1}{2}$$

$$(-1, -\frac{1}{2})$$

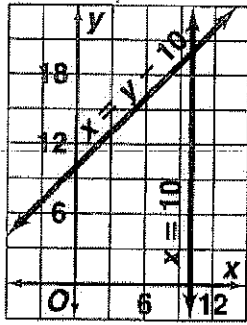
25.



37.



9. (10, 20)



10.
$$\begin{cases} y = 0.174x + 0.1 \\ y = 0.1107x + 2.354 \end{cases}$$

about 2005

11.
$$\begin{cases} y = 0.2182x + 67.52 \\ y = 0.1545x + 75.463 \end{cases}$$

about 2095

12. a.
$$\begin{cases} y = 3000x + 5200 \\ y = -900x + 35,700 \end{cases}$$

b. If Feb = 1, the revenue will equal expenses in the 7.82 month, or late August.

13. dependent

14. inconsistent

15. inconsistent

16. independent

17. inconsistent

18. inconsistent

19. dependent

20. independent

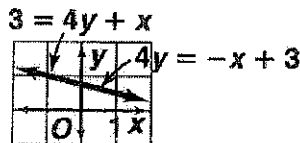
21. dependent

22. inconsistent

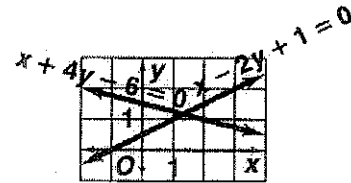
23. independent

24. inconsistent

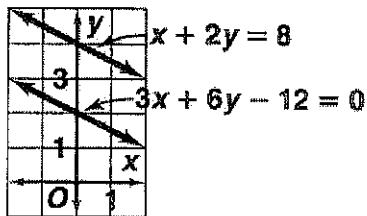
25. infinite solutions



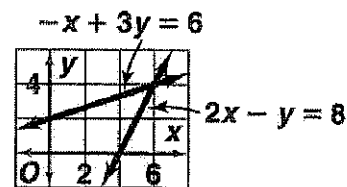
26. $(\frac{4}{3}, \frac{7}{6}) \approx (1.5, 1)$



27. no solution

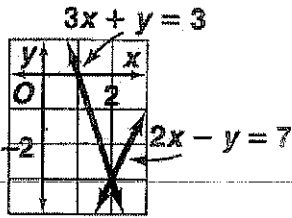


28. (6, 4)

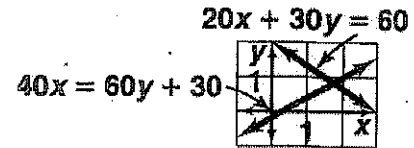


Answers for Lesson 3-1, pp. 118–121 Exercises (cont.)

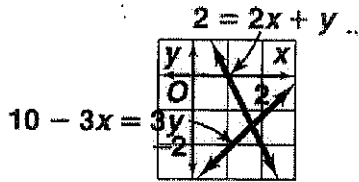
29. $(2, -3)$



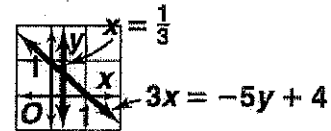
30. $(1.875, 0.75) \approx (2; 1)$



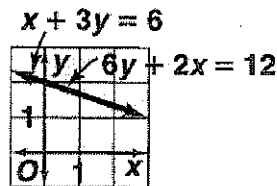
31. $(\frac{16}{9}, -\frac{14}{9}) \approx (1.5, -1.5)$



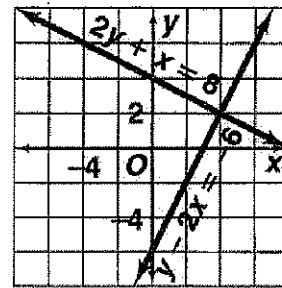
32. $(\frac{1}{3}, \frac{3}{5})$



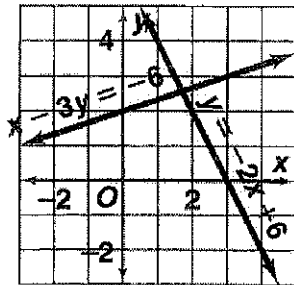
33. infinite solutions



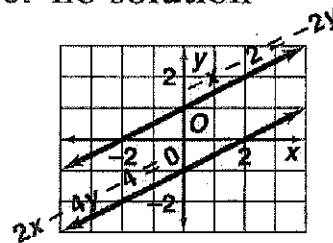
34. $(4, 2)$



35. $(\frac{12}{7}, \frac{18}{7}) \approx (1.7, 2.6)$



36. no solution



Answers for Lesson 3-2, pp. 126–128 Exercises

1. $(0.5, 2.5)$
2. $(c, d) = (-2, 4)$
3. $(20, 4)$
4. $(p, q) = (0.75, 2.5)$
5. $(10, -1)$
6. $(8, -1)$
7. $(a, b) = (0, 3)$
8. $(r, t) = (-6, -9)$
9. $(-2, -5)$
10. $(m, n) = (-3, 4)$
11. $(6, 4)$
12. $(r, s) = (-6, -6)$
13. a. $\begin{cases} d = 0.50m \\ d = 15 \end{cases}$
 b. 30 miles
14. 3 vans and 2 sedans, or 4 vans and 1 sedan, or 5 vans and 0 sedans
15. a. $\begin{cases} p = 28 \\ p = 8 + 0.35d \end{cases}$
 b. 58
16. 2 mi/h, 6 mi/h
17. $20^\circ, 70^\circ, 90^\circ$
18. $(7, 5)$
19. $(2, 4)$
20. $(a, b) = (-1, 3)$
21. $(2, -2)$
22. $(w, y) = (-2, -4)$
23. $(u, v) = (4, 1)$
24. $(2, 3)$
25. $(6, 0)$
26. $(8, 6)$
27. $(0, 3)$
28. $(1, 1)$
29. $(r, s) = (2, -1)$
30. $\{(x, y) \mid -2x + 3y = 13\}$
31. $\{(a, d) \mid -3a + d = -1\}$
32. $(a, b) = (3, 2)$
33. no solution
34. $(5, 4)$
35. no solution
36. $(\frac{20}{17}, \frac{19}{17})$
37. $(-3, 2)$

Answers for Lesson 3-2, pp. 126–128 Exercises (cont.)

38. $(r, s) = (4, 1)$

39. $(1, 3)$

40. no solution

41. $(m, n) = (1, -4)$

42. 2875 votes

43. In determining whether to use substitution or elimination to solve an equation, look at the equations to determine if one is solved or can be easily solved for a particular variable. If that is the case, substitution can easily be used. Otherwise, elimination might be easier.

44. $(-6, 30)$

45. $(m, n) = (4, -3)$

46. $(-1, -\frac{1}{2})$

47. $(t, v) = (50, 750)$

48. $(0.5, 0.75)$

49. $(\frac{3}{11}, -\frac{2}{11})$

50. $(300, 150)$

51. $(a, b) = (-235, -5.8)$

52. $(0.5, 0.25)$

53. $(5, 9)$

54. $(8, 3)$

55. $(1, 2)$

56. Elimination; substitution would be difficult since no coefficient is 1.

57. Substitution; the first equation is solved for y .

58. Substitution; the second equation is easily solved for n .

59. Substitution; the second equation is solved for y .

60. Elimination; $2x$ would be eliminated from the system if the equations were subtracted.

61. Elimination; substitution would be difficult since no coefficient is 1.

62. Answers may vary. Sample:
$$\begin{cases} -3x + 4y = 12 \\ 5x - 3y = 13 \end{cases} \quad (8, 9)$$

63. Answers may vary. Sample:
$$\begin{cases} y = 2x + 1 \\ y = -3x - 4 \end{cases}$$