

FINAL Study Guide

For Exercises 33–38, solve the equation. Check the solution.

33. $3x + 12 = 24$

34. $-7x - 13 = 15$

35. $8 - 2x = 30$

36. $-7 + 9x = 38$

37. $-4 - 6x = -22$

38. $8x + 17 = -15$

39. For each part (a)–(f), find the value of y when $x = -2$.

a. $y = 3x - 7$

b. $3x - 2y = 10$

c. $7x - 4y = 12$

d. $x = 4y - 2$

e. $3 = 2x - y$

f. $12 = -3x - 4y$

Write an equation of the line satisfying the given conditions.

40. slope = -4 , y -intercept = 3

41. slope = $\frac{2}{3}$, passes through the point $(3, 4)$

42. slope = -3 , y -intercept = 2

43. passes through the points $(5, 4)$ and $(1, 7)$

54. **Multiple Choice** Kaya wants to fence off part of her yard for a garden. She has 150 feet of fencing. She wants a rectangular garden with a length 1.5 times its width. Which system represents these conditions?

F.
$$\begin{cases} 1.5w = \ell \\ w + \ell = 150 \end{cases}$$

G.
$$\begin{cases} w = 1.5\ell \\ w + \ell = 150 \end{cases}$$

H.
$$\begin{cases} 2w = 3\ell \\ w + \ell = 75 \end{cases}$$

J.
$$\begin{cases} 3w = 2\ell \\ 2(w + \ell) = 150 \end{cases}$$

55. **Multiple Choice** Which equation shows how to find one dimension of the garden described in Exercise 54?

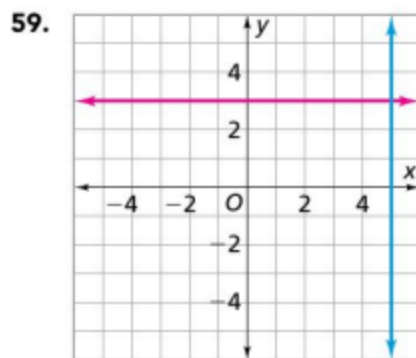
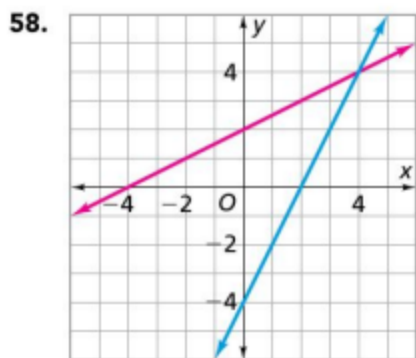
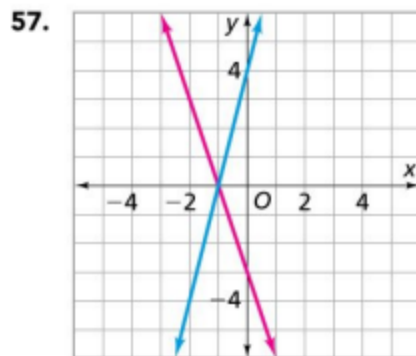
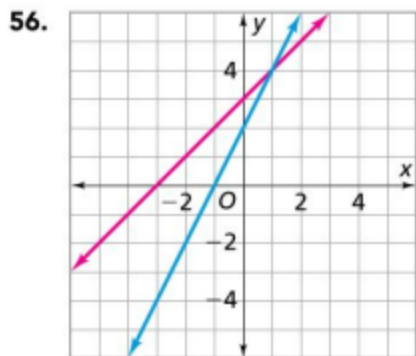
A. $2.5w = 150$

B. $2.5\ell = 150$

C. $2w = 3(75 - w)$

D. $5w = 150$

For Exercises 56–59, write an equation that represents each line on the graph. Then, solve the system of equations symbolically.



Solve each equation for x .

70. $5(x + 4) - 2x = 5 + 6x + 2x$

71. $2(x + 2) - 6x = 6x + 8 - 2x$

- 75.** Antonia and Marissa both babysit. Antonia charges \$5.50 an hour. Marissa charges a base rate of \$20.00, plus \$.50 an hour.
- For each girl, write an equation showing how the charge depends on babysitting time.
 - For what times are Marissa's charges less than Antonia's?
 - Is there a time for which Antonia and Marissa charge the same amount?
- 76.** Raj's age is 1 year less than twice Sarah's age. Toni's age is 2 years less than three times Sarah's age.
- Suppose Sarah's age is s years. What is Raj's age in terms of s ?
 - How old is Toni in terms of s ?
 - How old are Raj, Sarah, and Toni if the sum of their ages is 21?
- 77.** Melissa and Trevor sell candy bars to raise money for a class field trip. Trevor sells 1 more than five times as many candy bars as Melissa sells. Together they sell 49 candy bars.
- Let m represent the number of candy bars Melissa sells. Let t represent the number of candy bars Trevor sells. Write a linear system to represent this situation.
 - Solve your system to find the number of candy bars each student sells.

ANSWER KEY

<p>33. $x = 4$</p> <p>34. $x = -4$</p> <p>35. $x = -11$</p> <p>36. $x = 5$</p> <p>37. $x = 3$</p> <p>38. $x = -4$</p> <p>39. a. $y = -13$ b. $y = -8$ c. $y = -6.5$ d. $y = 0$ e. $y = -7$ f. $y = -1.5$</p> <p>40. $y = -4x + 3$</p> <p>41. $y = \frac{2}{3}x + 2$</p> <p>42. $y = -\frac{3}{1}x + 2$</p> <p>43. $y = -\frac{3}{4}x + 7\frac{3}{4}$</p> <p>54. J</p> <p>55. D</p> <p>56. Red Line: $y = x + 3$ Blue Line: $y = 2x + 2$ $x = 1, y = 4$</p> <p>57. Red Line: $y = -3x - 3$ Blue Line: $y = 4x + 4$ $x = -1, y = 0$</p> <p>58. Red Line: $y = \frac{1}{2}x + 2$ Blue Line: $y = 2x - 4$ $x = 4, y = 4$</p> <p>59. Red Line: $y = 3$ Blue Line: $x = 5$ $x = 5, y = 3$</p>	<p>70. $x = 3$</p> <p>71. $x = -\frac{1}{2}$</p> <p>75. a. Antonia: $y = 5.5x$; Marissa: $y = 20 + 0.5x$ b. Marissa's rate is a better deal for the customer when $x > 4$ hours. c. They have the same charge for $x = 4$ hours.</p> <p>76. Let R = Raj's age, s = Sarah's age, and T = Toni's age. a. $R = 2s - 1$ b. $T = 3s - 2$ c. $s + (2s - 1) + (3s - 2) = 21$ when $s = 4$, $R = 7$, and $T = 10$</p> <p>77. Let m = the number of candy bars Melissa sells and t = the number of candy bars Trevor sells. a. $\begin{cases} m + t = 49 \\ 5t + 1 = t \end{cases}$ b. Trevor sold 41 and Melissa sold 8.</p>
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