

ANSWERS FOR 5.5

For use with pages 286–289

5.5 Guided Practice

2. *Sample answer:* completing the square since not every quadratic equation can be solved by factoring.
4. 1; $(x + 1)^2$
6. 9; $(x - 3)^2$
8. $\frac{25}{4}; \left(x + \frac{5}{2}\right)^2$
10. $-2 \pm \sqrt{3}$
12. $8 \pm 2i\sqrt{3}$
14. $-3 \pm \sqrt{11}$
16. $y = (x + 6)^2 - 36;$
 $(-6, -36)$
18. $y = (x - 4)^2 + 15; (4, 15)$
20. $y = -(x - 7)^2 + 4; (7, 4)$
22. 27.4 ft by 5.1 ft

5.5 Practice and Applications

24. $(x + 10)^2$
26. $(x - 19)^2$
28. $(x - 0.7)^2$
30. $\left(x + \frac{1}{12}\right)^2$
32. 36; $(x - 6)^2$

34. 169; $(x + 13)^2$
36. $\frac{81}{4}; \left(x + \frac{9}{2}\right)^2$
38. $\frac{529}{4}; \left(x - \frac{23}{2}\right)^2$
40. 0.01; $(x - 0.1)^2$
42. 0.64; $(x - 0.8)^2$
44. $\frac{1}{49}; \left(x - \frac{1}{7}\right)^2$
46. $\frac{289}{256}; \left(x + \frac{17}{16}\right)^2$
48. $6 \pm 2\sqrt{2}$
50. $\frac{-3 \pm \sqrt{13}}{2}$
52. $15 \pm 3i\sqrt{2}$
54. $\frac{2}{3} \pm \sqrt{2}$ 56. $4 \pm \sqrt{7}$
58. $-5 \pm 3i\sqrt{5}$
60. $\frac{-13 \pm 3\sqrt{19}}{2}$
62. $6 \pm 4i$ 64. $3 \pm 2\sqrt{6}$
66. $-\frac{7}{2}, -1$ 68. $-14, -2$

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70. $\frac{3}{5}$

72. $\pm 3i\sqrt{10}$

74. $y = (x - 1)^2 - 10; (1, -10)$

76. $y = (x + 13)^2 - 101;$
 $(-13, -101)$

78. $y = \left(x + \frac{5}{2}\right)^2 - \frac{53}{4},$
 $\left(-\frac{7}{2}, -\frac{53}{4}\right)$

80. $y = -(x + 7)^2 + 2; (-7, 2)$

82. $y = -2\left(x + \frac{1}{2}\right)^2 - \frac{13}{2},$
 $\left(-\frac{1}{2}, -\frac{13}{2}\right)$

84. $y = \frac{2}{3}\left(x - \frac{3}{5}\right)^2 - \frac{6}{25},$
 $\left(\frac{3}{5}, -\frac{6}{25}\right)$

86. $4\sqrt{6} - 4 = x, \text{ or } x \approx 5.8$

88. $\frac{5 + \sqrt{241}}{2}, \text{ or } \approx 10.26$

90. about 46.4 ft

92. a. $4l + 3w = 240$

$3w = 240 - 4l$

$w = 80 - \frac{4l}{3}$

b. 42.25 ft by 23.67 ft or
17.75 ft by 56.33 ft

94. about 30 ft and 6 ft

96. C

98. A

100. *Sample answer:* The vertex moves up from the position of the other vertex so that the new vertex lies on the x -axis.

5.5 Mixed Review

102. -20

104. 60

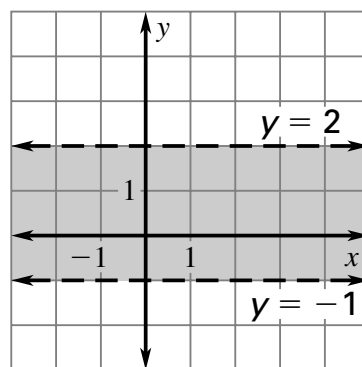
106. 1.2

108. $y = x - 6$

110. $y = -3x - 32$

112. $y = -\frac{5}{4}x + \frac{47}{4}$

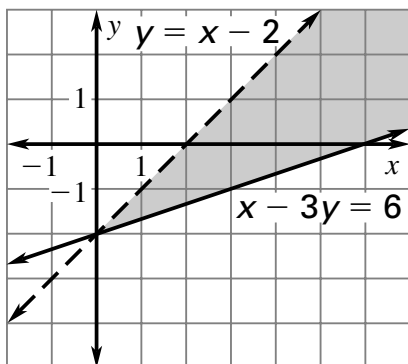
114.



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116.



118.

