Name _____ Date _____

3.3 Notetaking with Vocabulary (continued)

Extra Practice

In Exercises 1–3, solve the equation using square roots. Check your solution(s).

1. $x^2 + 4x + 4 = 2$ **2.** $t^2 - 40t + 400 = 300$ **3.** $9w^2 + 6w + 1 = -18$

In Exercises 4–6, find the value of *c* that makes the expression a perfect square trinomial. Then write the expression as the square of a binomial.

4. $y^2 - 14y + c$ **5.** $s^2 + 17s + c$ **6.** $z^2 + 24z + c$

In Exercises 7–12, solve the equation by completing the square.

7. $r^2 - 6r - 2 = 0$ **8.** $x^2 + 10x + 28 = 0$ **9.** $y(y + 1) = \frac{3}{4}$

10. $2t^2 + 16t - 6 = 0$ **11.** $3x(2x + 10) = -24$ **12.** $4x^2 - 5x + 28 = 3x^2 + x$

13. Explain how the expression $(4p + 1)^2 + 8(4p + 1) + 16$ is a perfect square trinomial. Then write the expression as a square of a binomial.

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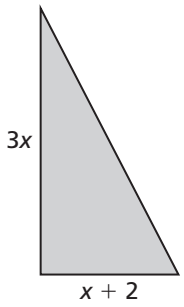
3.3 Notetaking with Vocabulary (continued)

In Exercises 14–17, determine whether you would use factoring, square roots, or completing the square to solve the equation. Explain your reasoning. Then solve the equation.

14. $x^2 + 7x = 0$ **15.** $(x - 1)^2 = 35$ **16.** $x^2 - 225 = 0$ **17.** $4x^2 + 8x + 12 = 0$

18. The area of the triangle is 30. Find the value of x.



19. Write the quadratic function $f(x) = x^2 + 6x + 22$ in vertex form. Then identify the vertex.

20. A golfer hits a golf ball on the fairway with an initial velocity of 80 feet per second. The height h (in feet) of the golf ball t seconds after it is hit can be modeled by the function $h(t) = -16t^2 + 80t + 0.1$.

a. Find the maximum height of the golf ball.

b. How long does the ball take to hit the ground?