Name _____ Date _____

LESSON 9.7

Practice C

For use with pages 600–605

Factor the polynomial.

1. $25x^2 - 81$ **2.** $225p^2 - 100$ **3.** $121w^2 - 625$

4. $36m^2 - 64$ **5.** $\frac{9}{16}r^2 - \frac{1}{16}$ **6.** $81x^2 - 49y^2$

7. $-3y^2 - 48y - 192$ **8.** $4n^2 - 40n + 100$ **9.** $12z^2 + 12z + 3$

10. $24a^2 - 120ab + 150b^2$ **11.** $-18s^2 - 48st - 32t^2$ **12.** $5z^2 + 2z + \frac{1}{5}$

Solve the equation.

13. $25m^2 - 64 = 0$ **14.** $2p^2 + 36p + 162 = 0$ **15.** $-16r^2 + 196 = 0$

16. $3w^2 - 60w + 300 = 0$ **17.** $36x^2 - 132x + 121 = 0$ **18.** $225a^2 - 120a + 16 = 0$

19. $-75y^2 - 90y - 27 = 0$ **20.** $196n^2 - 224n + 64 = 0$ **21.** $160z^2 = 640$

22. $0.9r^2 - 4.8r + 6.4 = 0$ **23.** $\frac{25}{2}b^2 + 5b + \frac{1}{2} = 0$ **24.** $-96d^2 + 144d - 54 = 0$

Determine the value(s) of *k* that make the expression a perfect square trinomial.

25. $81x^2 + kx + 25$ **26.** $100x^2 + kx + 49$ **27.** $25x^2 - 60x + k$

28. $kx^2 + 72x + 81$ **29.** $4x^2 - 12x + k$ **30.** $49x^2 + kxy + 4y^2$

31. **Squirrel** A squirrel jumps straight up with an initial vertical velocity of 16 feet per second. How many times does the squirrel reach a height of 4 feet? *Explain* your answer.

32. **Foot Bridge** A foot bridge that spans a small creek can be modeled by the equation

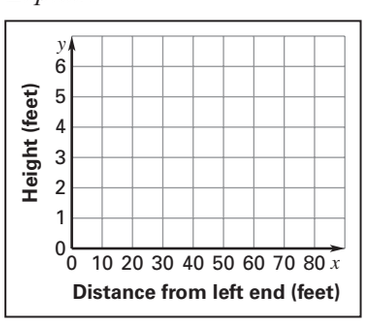
$$y = -\frac{3}{800}x^2 + \frac{3}{10}x$$

where x and y are measured in feet.

a. Make a table of values that shows the height of the bridge for $x = 0$, 20, 40, 60, and 80 feet from the left end.

b. For what additional values of x does the equation make sense? *Explain.*

c. Plot the ordered pairs in the table from part (a) as points in the coordinate plane. Connect the points with a smooth curve.



d. At approximately what distance from the left end does the bridge reach a height of 6 feet? Check your answer algebraically.