LESSON 7.6

NAME _____ DATE _____

Practice B

For use with pages 437–444

Solve the equation. Check for extraneous solutions.

1. $x^{4/3} - 5 = 11$ **2.** $2x^{3/4} + 7 = 23$ **3.** $(2x)^{3/4} = 8$

4. $(x - 1)^{2/3} = 4$ **5.** $2(x + 1)^{3/2} = 54$ **6.** $2x^{5/3} = -64$

7. $(2x + 3)^{1/3} - 5 = -2$ **8.** $(2x - 1)^{1/5} + 2 = 3$ **9.** $-(3x + 4)^{1/2} + 3 = 0$

Solve the equation. Check for extraneous solutions.

10. $\sqrt[4]{3x} + 5 = 6$ **11.** $3\sqrt{x + 6} + 5 = 14$ **12.** $\sqrt{5x - 1} + 8 = 2$

13. $\sqrt[3]{2x + 1} + 2 = 4$ **14.** $-\sqrt[3]{5x + 4} + 1 = -3$ **15.** $\sqrt[3]{3x + 1} + 5 = 3$

16. $\sqrt[5]{3 - x} + 4 = 3$ **17.** $2\sqrt[3]{1 - 3x} + 4 = 6$ **18.** $5 - \sqrt{2x + 1} = 3$

Solve the equation. Check for extraneous solutions.

19. $\sqrt[3]{2x + 1} = \sqrt[3]{8}$ **20.** $\sqrt{3x + 1} = \sqrt{x - 5}$ **21.** $\sqrt[4]{2x + 1} = \sqrt[4]{x + 6}$

22. $\sqrt{x + 2} = x + 2$ **23.** $\sqrt{2x - 3} = x - 3$ **24.** $\sqrt{12x + 13} = 2x + 1$

25. $\sqrt{3x + 13} = x + 5$ **26.** $\sqrt{2x} = x - 4$ **27.** $2\sqrt{x + 4} - 1 = x$

Use the *Intersect* feature on a graphing calculator to solve the equation.

28. $\frac{2}{3}x^{1/2} = 1$ **29.** $6(x + 3)^{3/5} = 18$ **30.** $(2x + 5)^{1/3} = -2$

31. $\sqrt{1.3x + 11} = 4$ **32.** $\sqrt[3]{43 - 5x} = 2.1$ **33.** $(2x + 3)^{2/3} = 3$

Velocity of a Free-Falling Object **In Exercises 34–36, use the following information.**

The velocity of a free-falling object is given by $V = \sqrt{2gh}$ where h is the distance (in feet) the object has fallen and g is acceleration due to gravity (in feet per second squared). The value of g depends on your altitude. If an object hits the ground with a velocity of 25 feet per second, from what height was it dropped in each of the following situations?

34. You are standing on the earth, so $g = 32$ ft/s^2.

35. You are on the space shuttle, so $g = 29$ ft/s^2.

36. You are on the moon, so $g = 0.009$ ft/s^2.