6-5 Practice   *Form G*

Solving Square Root and Other Radical Equations

Solve.

1. $5\sqrt{x} + 2 = 12$

3. $\sqrt{4x} + 2 = 8$

5. $\sqrt{3x - 3} - 6 = 0$

7. $\sqrt{3x - 2} - 7 = 0$

9. $\sqrt{33 - 3x} = 3$

11. $\sqrt[3]{13x - 1} - 4 = 0$

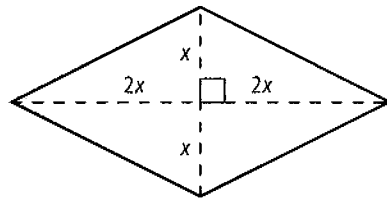**Solve.**

13. $(x - 2)^{\frac{1}{3}} = 5$

15. $2x^{\frac{3}{4}} = 16$

17. $x^{\frac{1}{2}} - 5 = 0$

19. $(7x - 3)^{\frac{1}{2}} = 5$

21. $x^{\frac{1}{6}} - 2 = 0$

23. $(x - 2)^{\frac{2}{3}} - 4 = 5$

25. The *area A* of the window is 196 ft^2. What are the width and height of the window?

27. A mound of sand at a rock-crushing plant is growing at the rate of $V = 0.2(t^3 + 1)$, where V is the volume of the sand in cubic meters and t is the time in hours. When is the volume equal to 549 m^3?

Solve. Check for extraneous solutions.

29. $\sqrt{x+1} = x-1$

31. $(x+7)^{\frac{1}{2}} = x-5$

33. $\sqrt{x+2} = x-18$

35. $(2x+1)^{\frac{1}{2}} = -5$

37. $\sqrt{x+1} = x+1$

39. $\sqrt[3]{2x-4} = -2$

41. $\sqrt{4x+2} = \sqrt{3x+4}$

43. $2(x-1)^{\frac{1}{2}} = (26+x)^{\frac{1}{2}}$

45. $\sqrt{2x} - \sqrt{x+1} = 1$

47. $(7-x)^{\frac{1}{2}} = (2x+13)^{\frac{1}{2}}$

49. $\sqrt{x+9} - \sqrt{x} = 1$

51. A clothing manufacturer uses the model $a = \sqrt{f+4} - \sqrt{36-f}$ to estimate the amount of fabric to order from a mill. In the formula, a is the number of apparel items (in hundreds) and f is the number of units of fabric needed. If 400 apparel items will be manufactured, how many units of fabric should be ordered?