

LESSON
6.6**Practice B***For use with pages 452–459***Solve the equation. Check your solution.**

1. $\sqrt{x} + 3 = 12$

2. $x^{1/2} - 4 = 1$

3. $3\sqrt{x+2} = 6$

4. $(2x - 3)^{1/2} + 2 = 2$

5. $5\sqrt{3x} = 15$

6. $3\sqrt{4 - 3x} = 21$

7. $7 - \sqrt{x - 4} = -6$

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

9. $2(x - 1)^{1/2} - 3 = 7$

Solve the equation. Check your solution.

10. $\sqrt[3]{x} + 1 = -2$

11. $4\sqrt[3]{x} + 2 = 0$

12. $\sqrt[3]{2x + 7} = 5$

13. $(x + 4)^{1/3} - 2 = -6$

14. $8\sqrt[3]{x} + 3 = 11$

15. $3x^{1/3} - 2 = -4$

16. $-2\sqrt[3]{2x + 5} + 7 = 15$

17. $\frac{1}{2}(5x + 1)^{1/3} + \frac{5}{2} = 4$

18. $6\sqrt[3]{x - 3} + 2 = \frac{1}{2}$

Solve the equation. Check for extraneous solutions.

19. $x^{5/3} = 243$

20. $x^{3/2} + 3 = 11$

21. $2x^{5/3} = -64$

22. $(x - 2)^{3/4} = 8$

23. $(2x + 12)^{2/3} - 3 = 13$

24. $(3x + 21)^{4/3} + 9 = 90$

Solve the equation. Check for extraneous solutions.

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

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

27. $\sqrt[3]{4x - 9} = \sqrt[3]{2x - 4}$

28. $\sqrt[4]{3x + 3} = \sqrt[4]{2x - 7}$

29. $\sqrt{x} + 1 = \sqrt{3x - 3}$

30. $\sqrt[3]{3x + 9} = \sqrt[3]{x + 6}$

31. $x + 2 = \sqrt{2x + 7}$

32. $\sqrt{2x + 3} = 1 + \sqrt{x + 1}$

In Exercises 33–35, use the following information.

Velocity The velocity of a free falling object is given by $V = \sqrt{2gh}$ where V is velocity (in meters per second), g is acceleration due to gravity (in meters per second squared), and h is the distance (in meters) the object has fallen. The value of g depends on which body/planet is attracting the object. If an object hits the surface with a velocity of 30 meters per second, from what height was it dropped in each of the following situations?

33. You are on Earth where $g = 9.81 \text{ m/s}^2$.

34. You are on the moon where $g = 1.57 \text{ m/s}^2$.

35. You are on Mars where $g = 3.72 \text{ m/s}^2$.