

Practice C

For use with pages 437–444

Solve the equation. Check for extraneous solutions.

1. $3(x - 1)^{2/3} + 4 = 52$
2. $2(x + 4)^{1/3} + 7 = -9$
3. $-(2x + 3)^{2/3} + 5 = 1$
4. $\frac{1}{2}(3x - 1)^{3/4} - 3 = 1$
5. $\frac{1}{3}(2x + 3)^{3/2} + 2 = -7$
6. $\frac{1}{3}(2x + 3)^{3/2} - 2 = 7$

Solve the equation. Check for extraneous solutions.

7. $3\sqrt{\frac{1}{2}x} - 5 + 1 = 7$
8. $4 - \sqrt{3x + 1} = 5$
9. $\frac{1}{5}\sqrt[3]{2x - \frac{1}{2}} + 3 = 6$
10. $\sqrt{x^2 + 3} - 5 = 4$
11. $2\sqrt{x^2 - 1} + 4 = 10$
12. $3\sqrt[3]{1 - x^2} + 1 = -8$

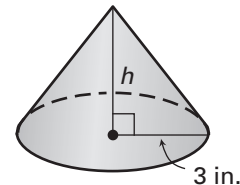
Solve the equation. Check for extraneous solutions.

13. $\sqrt[5]{3x + 7} = \sqrt[5]{2x + 1}$
14. $\sqrt{\frac{2}{3} + x} = -\sqrt{2x + \frac{1}{3}}$
15. $\sqrt{x - 7} = x - 7$
16. $\sqrt{3x^2 - 12x + 10} = 2x - 5$
17. $\sqrt[4]{2x^2 - 1} = x$
18. $\sqrt[3]{9x + 19} = x + 1$
19. $\sqrt[3]{2x^2 + 14} = x - 1$
20. $\sqrt[5]{4x^3 + x^2 - 4} = x$
21. $-\sqrt{x - 3} = x - 5$

Solve the equation. Check for extraneous solutions.

22. $\sqrt{x + 3} = 4 - \sqrt{x}$
23. $\sqrt{x - 5} = 2 + \sqrt{x}$
24. $\sqrt{x - 5} = 2 - \sqrt{x}$
25. $\sqrt{5x + 1} = 3 - \sqrt{5x}$
26. $\sqrt{2x + 1} = 1 + \sqrt{2x}$
27. $\sqrt{2x + 3} = 1 + \sqrt{x + 1}$

28. **Geometry** The lateral surface area of a cone is given by $S = \pi r \sqrt{r^2 + h^2}$. The surface area of the base of the cone is given by $B = \pi r^2$. The total surface area of a cone of radius 3 inches is 24π square inches. What is the height of the cone?



29. **Geometry** A container is to be made in the shape of a cylinder with a conical top. The lateral surface areas of the cylinder and cone are $S_1 = 2\pi rh$ and $S_2 = 2\pi r \sqrt{r^2 + h^2}$. The surface area of the base of the container is $B = \pi r^2$. The height of the cylinder and cone are equal. The radius of the container is 5 inches and its total surface area is 275π square inches. Find the total height of the container.

