

6-7 Practice

Solving Radical Equations and Inequalities

Solve each equation.

1. $\sqrt{x} = 8$

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

3. $\sqrt{2p} + 3 = 10$

4. $4\sqrt{3h} - 2 = 0$

5. $c^{\frac{1}{2}} + 6 = 9$

6. $18 + 7h^{\frac{1}{2}} = 12$

7. $\sqrt[3]{d+2} = 7$

8. $\sqrt[5]{w-7} = 1$

9. $6 + \sqrt[3]{q-4} = 9$

10. $\sqrt[4]{y-9} + 4 = 0$

11. $\sqrt{2m-6} - 16 = 0$

12. $\sqrt[3]{4m+1} - 2 = 2$

13. $\sqrt{8n-5} - 1 = 2$

14. $\sqrt{1-4t} - 8 = -6$

15. $\sqrt{2t-5} - 3 = 3$

16. $(7v-2)^{\frac{1}{4}} + 12 = 7$

17. $(3g+1)^{\frac{1}{2}} - 6 = 4$

18. $(6u-5)^{\frac{1}{3}} + 2 = -3$

19. $\sqrt{2d-5} = \sqrt{d-1}$

20. $\sqrt{4r-6} = \sqrt{r}$

21. $\sqrt{6x-4} = \sqrt{2x+10}$

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

Solve each inequality.

23. $3\sqrt{a} \geq 12$

24. $\sqrt{z+5} + 4 \leq 13$

25. $8 + \sqrt{2q} \leq 5$

26. $\sqrt{2a-3} < 5$

27. $9 - \sqrt{c+4} \leq 6$

28. $\sqrt{x-1} < 2$

29. **STATISTICS** Statisticians use the formula $\sigma = \sqrt{v}$ to calculate a standard deviation σ , where v is the variance of a data set. Find the variance when the standard deviation is 15.

30. **GRAVITATION** Helena drops a ball from 25 feet above a lake. The formula $t = \frac{1}{4}\sqrt{25-h}$ describes the time t in seconds that the ball is h feet above the water. How many feet above the water will the ball be after 1 second?