

NAME _____

DATE _____

Module 18 Solving Radical Equations
Lesson 2 Solving Multi-Step Radical Equations

independent practice

Solve.

- | | |
|---|-------------------------------------|
| 1. $\sqrt{p} - 8 = -2$ _____ | 2. $\sqrt{n} - 5 = 3$ _____ |
| 3. $\sqrt{d} + 6 = 4$ _____ | 4. $-\sqrt{m} + 8 = 5$ _____ |
| 5. $\sqrt{p} + 3 = 12$ _____ | 6. $-\sqrt{q} - 7 = 6$ _____ |
| 7. $2\sqrt{r} = 8$ _____ | 8. $\frac{\sqrt{z}}{3} = 5$ _____ |
| 9. $-8\sqrt{c} = -32$ _____ | 10. $\frac{2}{5}\sqrt{h} = 2$ _____ |
| 11. $13\sqrt{c} = -39$ _____ | 12. $\frac{7}{\sqrt{z}} = 1$ _____ |
| 13. $\sqrt[3]{5h} = 5$ _____ | 14. $\sqrt{h + 4} = 4$ _____ |
| 15. $\sqrt{z + 6} = -6$ _____ | 16. $2 = \sqrt{2x} - 6$ _____ |
| 17. $\frac{1}{2}\sqrt{y - 7} = 4$ _____ | 18. $\frac{\sqrt{5x}}{3} = 5$ _____ |
| 19. $\frac{30}{\sqrt{5b}} = 5$ _____ | 20. $-2\sqrt[3]{r - 5} = 6$ _____ |
| 21. $\sqrt{3c + 30} = 9$ _____ | 22. $\sqrt[3]{9x + 10} = 4$ _____ |

Journal

1. Explain how to solve the equation $\sqrt{x + 5} = 6$. Specifically, identify the order in which inverse operations are used to solve the equation and explain why.
2. Solve the equations $\sqrt{x} + 3 = 12$ and $\sqrt{x + 3} = 12$. How are the steps needed to solve each equation alike? How are they different?
3. To solve the equation $\sqrt{b} + 1 = 4$, Carla wants to square both sides of the equation. Is Carla's method valid? What would you do?
4. Henry solved the equation $-3\sqrt{x - 1} + 5 = 11$ as shown below.

$$\begin{aligned}
 -3\sqrt{x - 1} + 5 &= 11 \\
 -3\sqrt{x - 1} &= 6 \\
 \sqrt{x - 1} &= -2 \\
 x - 1 &= 4 \\
 x &= 5
 \end{aligned}$$

To check his solution, Henry substituted 5 for x in the equation $x - 1 = 4$ to get the true equation $5 - 1 = 4$, and he claimed that his answer was correct. What was his mistake and why?

© 2003 BestQuest



Cumulative Review

Solve.

1. $-\sqrt{y} = 12$

2. $\sqrt{t} = 1.4$

3. $-\sqrt[3]{x} = -5$

4. $-\sqrt[4]{j} = -4$

Simplify.

5. $\sqrt{50}$

6. $\sqrt{432}$

7. $\sqrt{5} \cdot \sqrt{3}$

8. $4\sqrt{2} \cdot 3\sqrt{2}$

9. $\frac{\sqrt{50}}{\sqrt{2}}$

10. $3\sqrt{3} + 4\sqrt{2}$

