

Chapter 9
Form B

For problems 1 – 3, find the indicated root, or state that the expression is not a real number.

1. $\sqrt{121}$ 1. _____

2. $\sqrt{-49}$ 2. _____

3. $\sqrt[3]{-125}$ 3. _____

For problems 4 – 6, simplify by first writing the expression in radical form.

4. $64^{\frac{1}{2}}$ 4. _____

5. $16^{-\frac{3}{4}}$ 5. _____

6. $125^{\frac{2}{3}}$ 6. _____

For problems 7 – 9, simplify each expression.

7. $7\sqrt{40}$ 7. _____

8. $\sqrt[3]{48x^7}$ 8. _____

9. $\sqrt{243x^8}$ 9. _____

For problems 10 – 19, perform the indicated operation and, if possible, simplify.

10. $\sqrt{7} \cdot \sqrt{14}$ 10. _____

11. $\sqrt[3]{12} \cdot \sqrt[3]{6}$ 11. _____

12. $\sqrt{\frac{8}{3}} \cdot \sqrt{\frac{4}{3}}$ 12. _____

13. $\frac{\sqrt{40x^5}}{\sqrt{x^2}}$ 13. _____

14. $\sqrt{5x^3} \cdot \sqrt{15x^6}$ 14. _____

Name _____

Date _____

15. $6\sqrt{8} + 4\sqrt{18} - \sqrt{32}$ 15. _____

16. $\sqrt{6}(3\sqrt{6} - 4\sqrt{2})$ 16. _____

17. $(5\sqrt{3} + 7)(2\sqrt{3} - 4)$ 17. _____

18. $(\sqrt{5} + 6)(\sqrt{5} - 6)$ 18. _____

19. $(3 - \sqrt{2})^2$ 19. _____

For problems 20 – 21, rationalize each denominator and, if possible simplify.

20. $\sqrt{\frac{8}{5}}$ 20. _____

21. $\frac{4}{5 - \sqrt{2}}$ 21. _____

For problems 22 – 24, solve each radical equation. If the equation has no solution, so state.

22. $\sqrt{x-1} = 7$ 22. _____

23. $\sqrt{2x-4} + 2 = 1$ 23. _____

24. $\sqrt{x+3} = 2\sqrt{x}$ 24. _____

25. The time, t , in seconds for a free-falling object to fall d feet is modeled by the formula $t = \left(\frac{d}{16}\right)^{\frac{1}{2}}$. If you accidentally drop a water balloon from a window 144 feet above the ground, how long will it take to hit the ground? 25. _____