

Rewrite the expression using rational exponent notation.			
1. $\sqrt{7}$	2. $\sqrt[3]{2}$	3. $(\sqrt[6]{15})^2$	4. $(\sqrt[9]{3})^4$
Rewrite the expression using radical notation. DO NOT SIMPLIFY.			
5. $3^{\frac{1}{2}}$	6. $5^{\frac{1}{3}}$	7. $9^{\frac{4}{3}}$	8. $15^{\frac{2}{5}}$
evaluate each expression.			
9. $\sqrt[3]{8}$	10. $(27)^{\frac{1}{3}}$	11. $(81)^{\frac{1}{4}}$	12. $\sqrt[6]{64}$
Solve the equation. Remember to write both answers when the radical has an EVEN INDEX!			
13. $3x^5 = 96$	14. $(x - 5)^4 = 16$	15. $(x + 2)^3 = 64$	
Evaluate the expression.			
16. $\sqrt[4]{16x^8}$	17. $\sqrt{4a^4b^6c^{10}}$	18. $(81x^8)^{\frac{1}{4}}$	19. $(-27x^6)^{\frac{2}{3}}$
Simplify the expression using the product and quotient properties of radicals.			
20. $\sqrt{7} \cdot \sqrt{3}$	21. $\sqrt[3]{4} \cdot \sqrt[3]{16}$	22. $\frac{\sqrt{75}}{\sqrt{3}}$	23. $\frac{\sqrt{35} \cdot \sqrt{6}}{\sqrt{15}}$

Simplify the expression using the properties of rational exponents. Assume all variables are positive. Leave your answer in rational exponent form if applicable. (DO NOT WRITE IN SIMPLEST FORM.)

24. $5^{\frac{1}{2}} \cdot 5^{\frac{3}{2}}$

25. $\left(3^{\frac{2}{3}}\right)^{\frac{5}{2}}$

26. $\frac{9^{\frac{3}{5}}}{9^{\frac{2}{5}}}$

27. $36^{\frac{3}{2}}$

28. $x^{\frac{1}{3}} \cdot x^{\frac{4}{3}}$

29. $\left(x^{\frac{3}{2}}\right)^{\frac{1}{2}}$

30. $\frac{x^{\frac{2}{3}}}{x^{\frac{5}{3}}}$

31. $x^{\frac{4}{3}}$

Perform the indicated operation. Assume all variables are positive.

32. $6\sqrt{7} - 3\sqrt{7}$

33. $7\sqrt{5} - 2\sqrt{20}$

34. $2\sqrt{27} + 4\sqrt{75}$

35. $\sqrt[3]{16} + \sqrt[3]{54}$

Solve the equation. Make sure to check your answer.

36. $\sqrt{x+3} = 7$

37. $\sqrt[3]{x+5} = 1$

38. $3\sqrt{x-5} - 4 = 2$

39. $\sqrt{3x-1} = \sqrt{2x+5}$

40. $3x^{\frac{3}{2}} = 24$

41. $(x-6)^{\frac{1}{3}} = -3$