

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. $15^{\frac{2}{5}}$
Use your calculator to 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. $\sqrt[3]{4} \cdot \sqrt[3]{1024}$	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. $x^{-\frac{2}{3}}$

32. $\sqrt{72}$ index = _____	33. $\sqrt[5]{486}$ index = _____	34. $\sqrt[3]{250x^4}$ index = _____
35. $\sqrt{a^3b^2}$ index = _____	36. $\sqrt[3]{88}$ index = _____	37. $\sqrt[5]{96x^5y^6}$ index = _____
Rationalize the following denominators.		
38. $\frac{5}{\sqrt{10}}$ index = _____	39. $\frac{3}{\sqrt[3]{3}}$ index = _____	40. $\frac{2}{\sqrt[3]{7}}$ index = _____
Perform the indicated operation. Assume all variables are positive.		
41. $6\sqrt{7} - 3\sqrt{7}$	42. $7\sqrt{5} - 2\sqrt{20}$	43. $2\sqrt{27} + 4\sqrt{75}$
		44. $\sqrt[3]{16} + \sqrt[3]{54}$
Solve the equation. Make sure to check your answer.		
45. $\sqrt{x+3} = 7$	46. $\sqrt[3]{x+5} = 1$	47. $3\sqrt{x-5} - 4 = 2$
48. $\sqrt{3x-1} - \sqrt{2x+5} = 0$	49. $3x^{\frac{3}{2}} = 24$	50. $(x-6)^{\frac{1}{3}} = -3$