

PC11 Rational Exponents Assignment

Name: _____

1. $(-3)^4$

2. -3^4

3. $0^1 \div 1^0$

4. $0^0 + 0$

5. $-3(-3)^{-2}$

6. $(-1)^{2024}$

7. 3^{-2}

8. $\left(\frac{2}{3}\right)^{-3}$

9. $\frac{x(x^3)^4(x^2)}{x^{-3}}$

10. $\left(\frac{4a^3b^5}{6ab^{-1}}\right)^{-2}$

11. Simplify $\frac{\sqrt{27}}{3}$

12. Rationalize $8^{-\frac{1}{2}}$

13. Write $x^{\frac{11}{2}}$ as a mixed radical

14. $(0.0004)^{1/2}$

15. $\sqrt[5]{\sqrt{x}} = x^k$. Find k

16. Solve $2a^2 = 50$

17. Solve $x^6 = 64$

18. $64^{\frac{2}{3}}$

19. Show that $1^{-1.2} = 1$

20. Convert $\sqrt[3]{5400}$ to a mixed radical

21. Simplify $x(\sqrt[5]{x^2})(\sqrt{x^3})$ using fractional exponents in the form $x^{a/b}$

22. Simplify $\frac{35^{600}}{5^{600}}$

23. Solve $49^{1-3x} = 343^{2x+5}$

24. Solve $x^{3/7} = 3$

25. Solve $x^{2/5} = 5$

26. Solve $\left(\frac{3^{1-3x}}{3^{2x+2}}\right)^3 = 8$

27. Evaluate $\frac{-3^{3000}}{(-3)^{2998}}$

28. Show that $\sqrt[c]{a^b} = (\sqrt[c]{a})^b$