

Algebra 2

Name _____

7.1 and 7.2 Exponent Practice #2 Homework

Simplify the following expressions completely, leaving no negative exponents. Do NOT use your calculator.

1. $(3a^2)(4a^6)$ $12a^8$

2. $(-4x^2)(-2x^{-2})$ 8

3. $(4x^3y^5)^2$ $16x^6y^{10}$

4. $(-2x^{-5}y^4)^3$ $-\frac{8y^{12}}{x^{15}}$

5. $\frac{8a^5}{2a^2}$ $4a^3$

6. $\frac{6x^7y^5}{3x^{-1}}$ $2x^8y^5$

7. $\frac{(4x^2)^0}{2xy^5}$ $\frac{1}{2xy^5}$

8. $\left(\frac{3x^2}{2}\right)^2$ $\frac{9x^4}{4}$

9. $(-6m^2n^2)(3mn)$
 $-18m^3n^3$

10. $(3x^4y^5)^{-3}$ $\frac{1}{27x^{12}y^{15}}$

11. $\frac{(2r^{-1}s^2t^0)^{-2}}{2rs}$ $\frac{r}{8s^5}$

12. $x^5(2x)^3$ $2x^8$

13. $\frac{x^4x^{-2}}{x^{-5}}$ x^7

14. $\frac{(12x^2y^6)^2}{-8x^4y^7}$ $18y^5$

15. $-2x^3(-3x^2)^3$ $54x^9$

16. $\frac{xy^2}{2} \cdot \frac{6x}{y^{-2}}$ $3x^2y^4$

17. $\frac{3xy^{-1}}{2xy} \div \frac{4x^{-1}}{3y^5}$ $\frac{9xy^3}{8}$

18. $-(4xy)^2 \div -2x^3$ $\frac{8y}{x}$

19. $\left(\frac{1}{4}\right)^{-2} \cdot \left(\frac{1}{4}\right)^2$ 1

20. $-27^{\frac{2}{3}} \cdot 27^{\frac{1}{3}}$ -27

21. $\left(\frac{1}{5}\right)^{\frac{-1}{2}} \cdot \left(\frac{1}{5}\right)^{\frac{3}{2}}$ $\frac{1}{5}$

$$22. (x^2 + 1)^{3x-4} \cdot (x^2 + 1)^{-2x+5}$$

$$(x^2 + 1)^{x+1}$$

$$23. \frac{4^{\frac{5}{2}}}{4^2} = 2$$

$$24. \left(16^{\frac{5}{8}}\right)^{\frac{4}{5}} = 4$$

$$25. (8^0)^{\frac{5}{3}} = 1$$

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

Solve. Make sure your answers are in simplest radical form. (no decimals)

$$31. x^3 = 64 \quad x = 4$$

$$32. (x+7)^2 = 24 \quad x = -7 \pm 2\sqrt{7}$$

$$33. (x+5)^4 = 16 \quad x = -7, -3$$

$$34. \frac{1}{4}(x)^3 = 2 \quad x = 2$$

$$35. 2x^6 = 1458 \quad x = \pm 3$$

$$36. 2x^5 + 73 = 53 \quad x = \sqrt[5]{-10}$$