

Intermediate Math Concepts
Properties of Exponents Homework

Name _____

Part 1: Evaluate the expression.

1. $(2^3 x^2)^5$ 2. $x^4 x^3 a^0$ 3. $(-3a^2 c)(-3b^2 c)$ 4. $(-3x^2 y^2)(-3xy)^2$

Part 2: Rewrite the expression with positive exponents.

5. $x^3 y^{-6}$ 6. $7x^{-5} y^{-1}$ 7. $\frac{1}{11x^{-2} y^{-7}}$ 8. $4x^{-2}$

9. $\frac{-4}{(8x^2)^{-3}}$ 10. $\frac{-5x^{-4} y}{7ab^{-2}}$ 11. $\frac{4r^0 s^{-1} t}{9^0 x^{-5}}$ 12. $(\frac{x^{-87} y^{32} z^{-822}}{12.8b^{-275}})^0$

Part 3: Simplify the expression. Write answers with positive exponents only.

13. $\frac{r^{-5} \cdot r^5}{r^3}$ 14. $\frac{(a^6 \cdot a^3)^3}{a^7}$ 15. $\left(\frac{7x^{-2} y}{x^8 y^{-5}}\right)^3$

16. $\frac{-10xy^8}{2x^4 y^2} \cdot \frac{-5xy^{-2}}{(-y)^3}$ 17. $\frac{3xy^4}{2x^5 y} \cdot \frac{6x^{-3} y^2}{4y}$ 18. $\frac{2x^2 y}{x^3 y^2} \cdot \frac{4x^7 y^2}{2x^3}$

19. $\left(\frac{3x^7 y^9}{5x^5 y^2}\right)(x^5 y)$ 20. $\frac{-8x^6 y^{-3}}{3x^{-2} y^{-5}} \cdot \frac{-6x^{-10} y}{-4x}$