

Algebra II
Exponents #2

Name _____

Simplify. Express the answer with only positive exponents.

1. $\frac{a^4(3b)^7}{a(3b)^2}$

2. $\frac{(-3)^4(2)^5}{(-3(2))^3}$

3. $-(3x^3)^2$

4. $(-3x^3)^2$

5. $(3ab^{-2})(3a^{-1}b^3)$

6. $\frac{-64x^4a^{-2}}{2x^5b^{-4}}$

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

8. $\left(\frac{15a^2b^{-2}}{-3ab^{-3}}\right)^2$

9. Rewrite the function using only positive exponents. Evaluate the function for the given value. Be sure to show your work. $f(x) = (2x)^{-6} \div 2x^3$, $f(-3)$

10. What is the value of n if $8^3 = 2^n$

11. What is the value of a if $27^2 = 9^a$

12. If $\left(\frac{3}{4}\right)^{-3} + \left(\frac{8}{3}\right)^2 = \frac{2^a}{3^b}$ Find the values of a and b.