

Algebra 2  
Properties of Exponents

Name: \_\_\_\_\_  
Period: \_\_\_\_\_

Rewrite each expression as a fraction without exponents (or as an integer).

1.  $7^{-3}$       2.  $-4^4$       3.  $(-4)^4$       4.  $-5^{-4}$       5.  $\left(\frac{2}{3}\right)^{-3}$       6.  $\left(\frac{7}{5}\right)^0$       7.  $\left(\frac{5}{3}\right)^{-1}$       8.  $\left(\frac{3}{2}\right)^{-5}$

Simplify without negative exponents.

9.  $a^5 \cdot a^{-12}$       10.  $(a^3)^6$       11.  $(3a^2) \cdot (2a^3)^2$       12.  $9a^6 \cdot 6a^{-4}$

13.  $(-4a^2b) \cdot (-ac^2) \cdot (3b^2c^2)$       14.  $(6x^2) \cdot (4x^2y^3)$       15.  $(-7m^5n^4) \cdot (8n^3)$

16.  $(y^2)^4 \cdot (x^3y^2)^5$       17.  $\frac{a^9}{a^4}$       18.  $\frac{a^3}{a^{-4}}$       19.  $\frac{36a^{-3}}{2a^6}$       20.  $\frac{3a^8}{24a^{-3}}$

21.  $\left(\frac{27b^4a^2}{6a^5b^2}\right)^2$       22.  $\left(\frac{3x^2}{2y^3}\right)^5$       23.  $\left(\frac{-9x^2}{27xy^4}\right)^2$       24.  $\frac{-24x^5y^{12}}{-36x^3y}$

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