

MULTIPLYING AND DIVIDING POWERS

NEGATIVE EXPONENTS

$x^{-3} =$

$x^{-8} y^3 =$

$4x^{-12} =$

$\frac{1}{x^{-3}} =$

$\frac{y^{-4}}{x^{-2}} =$

$\frac{1}{xy^{-4}} =$

$x^{-2} y^{-4} =$

$\frac{2}{3} x^{-4} y^3 =$

PRODUCT OF POWERS PROPERTY

When multiplying two powers with the same base, you must _____ the exponents.

Example: $x^2 x^3 =$ _____ $(3y^8)(5y^5) =$ _____ $(2z^3 y^3)(-4z y^4) =$ _____ $y^3 y^{-5} =$ _____

QUOTIENT OF POWERS PROPERTY

$\frac{x^8}{x^3} =$

When dividing two powers with the same base, you must _____ the exponents.

Example: $\frac{y^4}{y^3} =$ _____ $\frac{z^8}{z} =$ _____ $\frac{x^{15}}{x^5} =$ _____ $\frac{x^2}{x^{-4}} =$ _____

POWER OF A POWER

$(x^2)^3 =$

When taking a power of a power, you must _____ the exponents.

$(x^4)^6 =$ _____ $(x^8)^2 =$ _____ $(x^{12})^8 =$ _____

POWER OF A MONOMIAL

A power of a product is the product of the powers.

$(x^5 y^3)^8 =$ _____ $(5x^3 y^2)^5 =$ _____ $(-3xy^2)^6 =$ _____

DIVIDING MONOMIALS

STEP 1: Simplify your coefficients

STEP 2: Divide your variables

STEP 3: Change negative exponents to positive by switching their position.

$$\frac{6x^9y^3}{8x^4y} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

$$\frac{4x^5y^{-10}}{3x^4y^4} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

$$\frac{9x^8y^3}{3x^4y^9} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

$$\frac{6x^2y^{14}}{12x^8y^{18}} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

$$\frac{5x^{12}y^5}{9x^4y^{11}} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

$$\frac{2x^3y^9}{8x^8y^{-3}} \quad \boxed{} x^{\boxed{}} y^{\boxed{}} =$$

