

Simplify:

1. $(4x^3y^2z^{-4})^{-2}$

$$\frac{16x^{-6}y^{-4}z^8}{16x^6y^4} = \frac{z^8}{x^6y^4}$$

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

$$(3x-2)(3x-2)$$

$$9x^2 - 6x - 6x + 4$$

$9x^2 - 12x + 4$

4. $\frac{8a^3b^3c^3}{24a^3b^2c^7}$

b
3c ⁴

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

3. $(2xy^{-2})^3 (6x^4y^{-2}z)$

$$(8x^3y^{-6})(6x^4y^{-2}z)$$

$$48x^7y^{-8}z$$

$$\frac{48x^7z}{y^8}$$

Dividing Polynomials by Monomials

Dividing Polynomials by Monomials

Step 1: Divide each by simplifying the coefficients and subtracting the exponents of the like bases.

Step 2: Simplify any negative exponents.

Example:

$$\underline{3xy^3 - 12xy - 15x^2y}$$

$$3xy$$

$$\frac{\cancel{3xy^3}}{\cancel{3xy}}$$

$$\frac{-12\cancel{xy}}{\cancel{3xy}}$$

$$\frac{-15x^2\cancel{y}}{\cancel{3xy}}$$

$$y^2 - 4 - 5x$$
$$\boxed{-5x + y^2 - 4}$$

$$\frac{5x^4y^5 + 10x^2y^3 - 20x^2y^3}{30x^2y^3}$$

$$\frac{5x^4y^5}{30x^2y^3} \quad \frac{10x^2y^3}{30x^2y^3} \quad \frac{-20x^2y^3}{30x^2y^3}$$

$$\frac{1}{6}x^2y^2 + \frac{1}{3} - \frac{2}{3}$$

$$\frac{1}{6}x^2y^2 - \frac{1}{3}$$

You Try:

$$1. \frac{16xy + 4x^2y^4 - 8y}{2xy}$$

$$\frac{\cancel{16xy}}{\cancel{2xy}}$$

$$8$$

$$\frac{4x^2y^4}{2xy}$$

$$2xy^3$$

$$\frac{-8y}{\cancel{2xy}}$$

$$-\frac{4}{x}$$

$$2xy^3 - \frac{4}{x} + 8$$