

# Division Rules of Exponents



## Overview of problems



Example Set: A

Simplify the expression

$$\frac{x^{10}}{x^6}$$

$$\frac{y^4}{y^7}$$

$$g^8 \cdot \frac{1}{g^{12}}$$

$$\frac{2x^2y^5}{6xy^{11}}$$

$$\frac{x^m}{xy} \cdot (xy)^{-3}$$

$$\frac{3y^8z^2}{y^{-2}z^{-1}} \cdot \frac{5z^{-6}}{(y^3)^2}$$



Example Set: B

Simplify the expression

$$\frac{4x^2y^3}{-10xy^9}$$

$$\frac{(2x^2y^5)^{-2}}{(3xy)^{-1}}$$



Example Set: C

Simplify the expression

$$\frac{(7xyz)^{-1}}{xy^{-3}} \cdot \frac{xy^2}{14x^2y^{-1}}$$

$$\frac{2xy^{-3}}{x^2y^2} \cdot \frac{(4xy^3)^{-1}}{xy}$$

# Division Rules of Exponents



## Overview of problems- KEY



Example Set: A

Simplify the expression

$$\frac{x^{10}}{x^6} = x^4$$

$$\frac{y^4}{y^7} = \frac{1}{y^3}$$

$$g^8 \cdot \frac{1}{g^{12}} = \frac{1}{g^4}$$

$$\frac{2x^2y^5}{6xy^{11}} = \frac{x}{3y^6}$$

$$\frac{x^m}{xy} \cdot (xy)^{-3} = \frac{x^{(m-y)}}{x^3y^3}$$

$$\frac{3y^8z^2}{y^{-2}z^{-1}} \cdot \frac{5z^{-6}}{(y^3)^2} = \frac{15y^4}{z^3}$$



## Example Set: B

Simplify the expression

$$\frac{4x^2y^3}{-10xy^9} = -\frac{2x}{5y^6}$$

$$\frac{(2x^2y^5)^{-2}}{(3xy)^{-1}} = \frac{3}{4x^3y^9}$$



## Example Set: C

Simplify the expression

$$\frac{(7xyz)^{-1}}{xy^{-3}} \cdot \frac{xy^2}{14x^2y^{-1}} = \frac{y^5}{98x^3z}$$

$$\frac{2xy^{-3}}{x^2y^2} \cdot \frac{(4xy^3)^{-1}}{xy} = \frac{1}{2x^3y^9}$$