



Negative Exponent:

$$3^n \rightarrow 3^{-3} \xrightarrow{\text{reciprocal}} \left(\frac{1}{3}\right)^3 = \frac{1}{27}$$

$$3^3 = 27$$

$$0^5 = 0$$

~~$$\frac{0}{-} = \frac{+}{0}$$~~

#1-

$$a. \frac{1}{3^{-2}} \rightarrow = \cancel{3} \cdot 3^2 = 9$$

$$c. -3^{-2} = -\frac{1}{3^2} = \left(-\frac{1}{9}\right)$$

$$(-3)^{-2} = \frac{1}{9}$$

#2 -

$$x^3 \cdot x^4 = x^7$$

a. $\frac{x^2 y^5 y^{-4} x^3}{x^3 y^{-3}} = \frac{x^3}{y^3}$

b.

$$\frac{y^4 x^{-3} y^4 x^{-10}}{y^{-6} x^{-3} y^{10} x^2} = \frac{x^4 y^3}{x^6 y^4} = \frac{x^4 y^3}{x^6 y^4}$$
$$\left(\frac{1}{x^5 y} \right)$$

$$(x^3)^7 = x^{21}$$

$$\frac{xx^{-6} \quad xx^3 \quad y^6}{x^6 \quad y^{-3} \quad x^6}$$

$$\frac{x^{-7} \quad y^6}{x^{12} \quad y^{-3}}$$

$$\frac{y^6 y^3}{x^{12} x^3}$$

#3 -

a.

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