

Topic: Exponents (day 4)

$$\textcircled{\text{ex}} \left(\frac{4x}{12x^3} \right)^2 =$$

$$\left(\frac{\overset{1 \cdot 1}{\cancel{4}x}}{\underset{3 \cdot 1}{\cancel{12}x \cdot x \cdot x}} \right)^2 =$$

* Simplify inside the parentheses first 😊

$$\left(\frac{1}{3 \cdot x \cdot x} \right)^2$$

* Expand

$$\left(\frac{1}{3 \cdot x \cdot x} \right) \left(\frac{1}{3 \cdot x \cdot x} \right) =$$

$$\frac{1 \cdot 1}{3 \cdot 3 \cdot x \cdot x \cdot x \cdot x} = \boxed{\frac{1}{9x^4}}$$

$$\textcircled{\text{ex}} \frac{-x(-y)^4}{(-xy)^4} = \frac{-x(-y)(-y)(-y)(-y)}{(-x \cdot y)(-x \cdot y)(-x \cdot y)(-x \cdot y)} =$$

$$\frac{\cancel{(-)}\cancel{(-)}\cancel{(-)}\cancel{(-)}(-)x \cdot \cancel{y} \cdot \cancel{y} \cdot \cancel{y} \cdot \cancel{y}}{\cancel{(-)}\cancel{(-)}\cancel{(-)}\cancel{(-)}x \cdot x \cdot x \cdot x \cdot \cancel{y} \cdot \cancel{y} \cdot \cancel{y} \cdot \cancel{y}} = \boxed{\frac{-1}{x^3}}$$