



# Dividing Monomials

Video Notes

[Video Link](#)

$$\frac{x^{100} \rightarrow}{x^{50} \rightarrow}$$

# Dividing Monomials

Divide:  $y^6 \div y^2$  "cancel" to get 1. (not 0)

$$\begin{aligned} \rightarrow & \frac{y \cdot y \cdot y \cdot y \cdot y \cdot y}{y \cdot y} = \frac{y^4}{1} = \boxed{y^4} \\ \rightarrow & \frac{y \cdot y \cdot 1 \cdot 1}{1 \cdot 1} \end{aligned}$$

## Conclusion:

\* When dividing monomials with the same base, subtract the exponents.

\* The base stays the same!

Divide:

$$\frac{5^7}{5^4} = \frac{5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5}{5 \cdot 5 \cdot 5 \cdot 5} = \frac{5^3}{1} = \boxed{5^3}$$

Divide:  $\frac{24ab^2c^5}{6b^2c^3}$  Still a monomial (one term)

$$\begin{aligned} & \frac{24 \cdot a \cdot b \cdot b \cdot c \cdot c \cdot c \cdot c \cdot c}{6 \cdot b \cdot b \cdot c \cdot c \cdot c} \\ & = \frac{4ac^2}{1} = \boxed{4ac^2} \end{aligned}$$

$$\begin{aligned} & \frac{24ab^2c^5}{6b^2c^3} = \boxed{4ac^2} \\ & \downarrow \\ & \frac{0}{0} = 1 \end{aligned}$$