

## COMBINING POWERS

Math 9

Ex 1) Evaluate  $2^5 \times 5^4$ . Not the same base, so we cannot apply the exponent laws.

$$\begin{aligned} & 2^5 \times 5^4 \\ & 32 \times 625 \\ & \boxed{20000} \end{aligned}$$

Ex 2) Simplify  $(2^3 \times 4^2)^3$ .

$$\begin{aligned} & 2^{3 \times 3} \times 4^{2 \times 3} \\ & 2^9 \times 4^6 \\ & 512 \times 4096 \\ & = \boxed{2097152} \end{aligned}$$

Ex 3) Simplify  $\left(\frac{-3^2}{4^3}\right)^3$ .

$$\left(\frac{-3^2}{4^3}\right)^3$$

$$\left(\frac{-9}{64}\right)^3$$

$$\frac{(-9)^3}{64^3} = \boxed{\frac{-729}{262144}}$$