

**Warm-Up**

Using the numbers 0-9, at most once, create an expression closest to zero as possible

$$\boxed{8} - \boxed{2} = \frac{\boxed{1}}{\boxed{6}\boxed{4}}$$

**Power Rule - What do you think happens?**

$$(2^3)^4$$

**Why?**

Tamar's First Expression:

$$(2^3)^4 = (2^3)(2^3)(2^3)(2^3) = 2^{12} = 4,096$$

**The Rule**

$$(a^m)^n = a^{m \times n}$$

**Let's Practice**

$$\begin{array}{ccc} (5^2)^3 & (x^4)^5 & (x^4y^5)^3 \\ 5^{2 \cdot 3} & x^{4 \cdot 5} & x^{4 \cdot 3} y^{5 \cdot 3} \\ 5^6 & x^{20} & x^{12} y^{15} \end{array}$$

**What About Coefficients?**

$$\begin{array}{ccc} (2x)^3 & (3ab^4)^4 & \\ 8x^3 & (3ab^4)(3ab^4)(3ab^4)(3ab^4) & \\ (2x)(2x)(2x) & 81a^4b^{16} & \end{array}$$

**Pick ONE challenge problem!**

$$(2x^3)^4(-3x^2y^3)^2$$

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

**IXL**  
**8th Grade**  
**F.11**  
**90 smart score!**  
**NO CALCULATOR**