Definition of Natural Number Exponents

If b is any real number and n is a natural number, then

$$b^n = \overbrace{b \cdot b \cdot b \cdot \cdots \cdot b}^{b \text{ is a factor } n \text{ times}}$$

where b is the **base** and n is the **exponent.**

EXAMPLE

$$\left(\frac{3}{4}\right)^3 = \frac{3}{4} \cdot \frac{3}{4} \cdot \frac{3}{4} = \frac{27}{64}$$

$$-5^4 = -(5 \cdot 5 \cdot 5 \cdot 5) = -625$$

$$(-5)^4 = (-5)(-5)(-5)(-5) = 625$$