

## 1-3 / Exponents

expression - mathematical sentence that contains operations and numbers.  
(+, -, ÷, x)

$$5 \times 3 \quad 5 \cdot 3 \quad 2 + 7$$

exponent - a number that tells how many times the base is used as a factor.

base - the number being multiplied.

$$6 \cdot 6 \cdot 6 = 6^3$$

3 ← exponent  
↑ base (larger #)

$$4^4 \text{ means } 4 \cdot 4 \cdot 4 \cdot 4$$

NOT 4.4

$$2^3 \text{ means } 2 \cdot 2 \cdot 2$$

NOT 2.3

$4^2 \rightarrow$  "4 to the 2<sup>nd</sup> power"  
 $\rightarrow$  "4 squared"

$6^2 \rightarrow$  "6 to the 2<sup>nd</sup> power"  
 $\rightarrow$  "6 squared"

$7^3 \rightarrow$  "7 to the 3<sup>rd</sup> power"  
 $\rightarrow$  "7 cubed."

• Write the expression in exponential form.

$$8 \cdot 8 \cdot 8 \cdot 8 = 8^4$$

4 ← exponent  
^ base

$$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 = 3^5$$

• Write the expression as repeated multiplication.

$$9^5 \quad 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$$

• Find the value / Evaluate

$$4^3 = \underbrace{4 \cdot 4 \cdot 4}_{16} = 64 \quad \begin{array}{r} 4^3 \\ 64 \\ \hline 64 \end{array}$$

$$25^0 = 1 \quad (\text{To the } 0 \text{ power} = 1)$$

$$6^2 = 6 \cdot 6 = 36$$

$$3^2 \square 6' \quad >, <, =$$

$$3 \cdot 3 \square 6$$

$$9 \square > 6$$