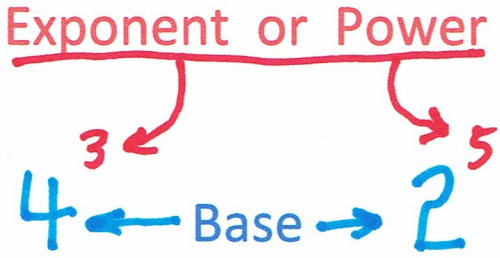
Exponential Notation



Expanded or Factored Form

$4 \cdot 4 \cdot 4$

$16 \cdot 4$

64

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

$4 \cdot 4 \cdot 2$

$16 \cdot 2$

32

If asked to <u>evaluate</u> or <u>simplify</u>, then multiply to find the value.

An exponent applies to what it touches, nothing more:

$-5xy^2z$

$-5xyyz$

-3^2

$3 \cdot 3$

-9

$(-3)^2$

$(-3)(-3)$

9

Exponential Notation	10^2	10^3	10^4
Factored Form	$10 \cdot 10$	$10 \cdot 10 \cdot 10$ $100 \cdot 10$	$10 \cdot 10 \cdot 10 \cdot 10$ $100 \cdot 100$
Evaluate or Simplify	100	1,000	10,000
Write as a power of 10.	10^2	10^3	10^4

(This gets used in scientific notation.)

Here are some examples that may look strange:

1^3

$1 \cdot 1 \cdot 1$

1

1^{17}

1

$5^0 = 1$ $\quad \frac{5}{5} = 1$

$19^0 = 1$ $\quad \frac{19}{19} = 1$

$(-4)^0 = 1$

$-4^0 = -1$

$x \neq 0$

$x^0 = 1$ $\quad \frac{x}{x} = 1$