EXPONENTS

What are exponents?

In a mathematical expression where the same number is multiplied many times, it is often useful to write the number as a base with an exponent. **The exponent represents the number of times to multiply the number, or base. When a number is represented in this way it is called a power.**

Example: $5^3 \rightarrow$ power with base of 5 and exponent of 3

How to use exponents:

- To solve for a power, simply multiply the base the number of times indicated by the exponent. In our example, 5^3, five would be multiplied three times, $5 \cdot 5 \cdot 5 = 125$.

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- Numbers written in expanded form use exponents. The number 3,452 in expanded form would be $(3 \cdot 10^3) + (4 \cdot 10^2) + (5 \cdot 10) + (2 \cdot 1)$. Each number is multiplied by its place value and then added.

- When performing mathematical operations with exponents, evaluate the exponent and then perform the operation. In the Order of Operations, exponents are evaluated after parentheses.

Try this!

1. Solve the following:

$6^2 =$

$4^3 =$

5^4 =

3^4 =

2. Rewrite with exponents:

$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

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

$7 \cdot 7$

3. Write

2,68

3,254

Solve:

$6^2 + 4 =$

$2^3 \cdot 3^2 =$

$5 + 8^2 - 12 =$