



Exponents

$$(5)(5)(5) = 5^3$$



Chapter 7

Exponents & Exponential Functions Overview & Introduction



The Big Ideas & Essential Questions:

Equivalence: How can you represent very large and very small numbers?

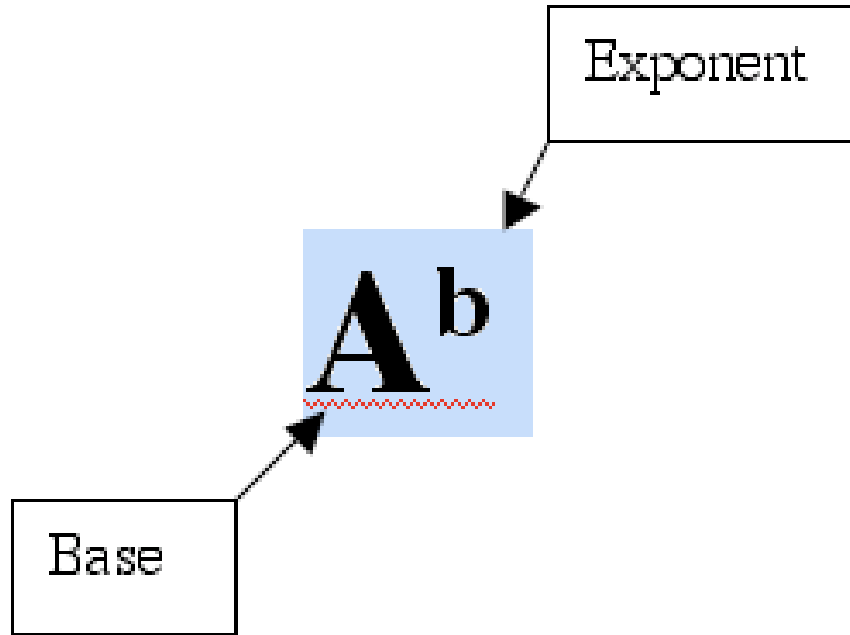
Properties: How can you simplify expressions involving exponents?

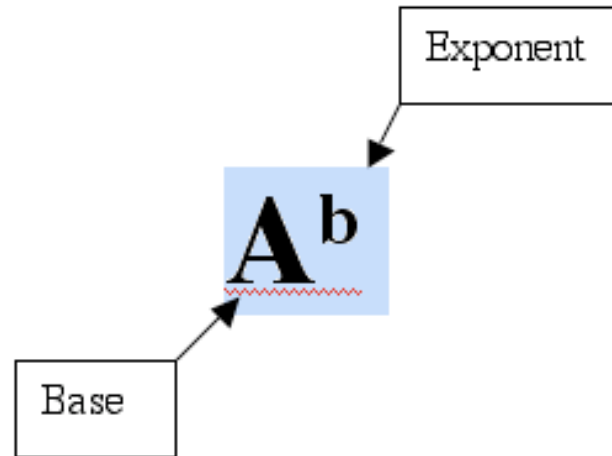
Essential Understandings



You will:

- Learn to write numbers in scientific notation
- Define and use zero and negative exponents
- Learn the rules for multiplying powers
- Learn the rules for dividing powers
- Learn the rules for simplifying exponents





Means: $A * A * A * A * A \dots$ "b" times

Exponents:

$$x^n = x * x * x * x \dots \text{ ("x" times itself "n" times)}$$

$$(ay)^b = ay * ay * ay \dots \text{ ("ay" times itself "b" times)}$$

"x" or "ay" is called the "base"

"n" or "b" is called the "exponent" or "power"

$$\text{Does } 2x^3 = (2x)^3 \text{ ???}$$

There are four kinds of exponents:

- positive integers: x^2
- negative integers: x^{-3}
- zero: x^0
- rational: $x^{2/3}$

Note: Any unstated exponent is assumed to have a value of 1

In this Chapter You Will Learn to Simplify Exponents

To reduce exponential terms to the lowest possible form:

- a) multiply and divide all exponential terms following the appropriate rules, resulting in the fewest possible terms
- b) eliminate all zero exponents
- c) eliminate all negative exponents

