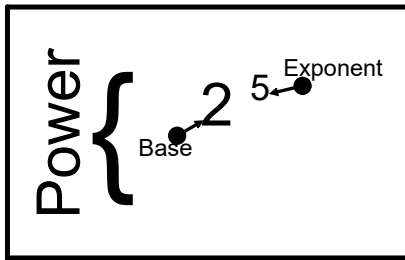


Chapter 2: Powers



$$(-\text{BASE})^{\text{Even}} = (+)$$

$$(-\text{BASE})^{\text{odd}} = (-)$$

$$(+\text{BASE})^{\text{any number}} = (+)$$

Standard Form to Powers of Ten Form

$$56\,209 = (5 \times 10^4) + (6 \times 10^3) + (2 \times 10^2) + (9 \times 10^0)$$

Exponent Laws

1) Zero Rule

$$(x)^0 = 1$$

2) Product of Powers Rule

$$(a)^3 \times (a)^5 = (a)^{3+5} = (a)^8$$

3) Quotient Rule

$$\frac{(x)^7}{(x)^5} = (x)^{7-5} = (x)^2$$

4) Power to a Power Rule

$$(a^5)^3 = a^{5 \times 3} = (a)^{15}$$

5) Power of Product Rule

$$[(a^5) \times (b^4)]^3 = a^{5 \times 3} \times b^{4 \times 3}$$

$$= a^{15} \times b^{12}$$

6) Power of Quotient Rule

$$\left[\frac{(a)^6}{(b)^3} \right]^2 = \frac{(a)^{6 \times 2}}{(b)^{3 \times 2}}$$

$$= \frac{(a)^{12}}{(b)^6}$$

7) Negative Exponent

$$(a)^{-7} = \frac{1}{(a)^7}$$