REVIEW

Powers

of Ten

POWERS OF TEN

It is often useful to use powers of ten when expressing large and small numbers.

Positive exponents:

$10^2 =$

$10^3 =$

$10^6 =$

What is a trillion?

NOTE:

A positive exponent tells how many zeros follow the 1.

A negative exponent tells how many places are to the right of the decimal point, including the 1.

Negative exponents:

$10^{-2} =$

$10^{-3} =$

$10^{-6} =$

How do you write one-trillionth?

Multiplying and Dividing Powers of 10.

$10^4 \times 10^9 =$

$10^5 \times 10^{-4} =$

$10^{-7} \times 10^{-3} =$

$10^4 \div 10^9 =$

$10^5 \div 10^{-4} =$

$10^{-7} \div 10^{-3} =$

Rules of exponents:

$a^m \times a^n = a^{m+n}$

$$\frac{a^m}{a^n} = a^{m-n}$$

$(a^m)^n = a^{m \times n}$

Adding and Subtracting Powers of 10

If the powers of 10 are not the same, one must write them in decimal notation.

$10^4 + 10^3 =$

$10^5 + 10^{-4} =$

$10^{-7} + 10^{-3} =$