Calculate with Scientific Notation

EXP2

Add and Subtract Steps:

1) Write the numbers in standard notation
2) Line up by place value
3) Add or Subtract
4) Write the sum or difference in scientific notation

EX: $3.4 * 10^8 - 9.7 * 10^6$

$$\begin{array}{r} 340,000,000 \\ -\ \ 9,700,000 \\ \hline 330,300,000 \end{array}$$

$3.303 * 10^8$

If the powers of ten are the same, you can just add or subtract the constants and keep the same power of ten.

EX: $5.2 * 10^{12} + 3.8 * 10^{12}$

$$\begin{array}{r} 5.2 * 10^{12} \\ +\ 3.8 * 10^{12} \\ \hline 9.0 * 10^{12} \end{array} \rightarrow 9 * 10^{12}$$

Multiply and Divide Steps:

1) Multiply or divide the constants
2) If multiplying, add the exponents on the powers of 10
   If dividing, subtract the exponents on the powers of 10
4) Write the product or quotient in scientific notation

EX: $2*10^6 \cdot 6*10^8$

$12*10^{14}$

$1.2*10^{15}$

$$6\overline{)1.2} \quad .2$$

EX: $\frac{1.2*10^7}{6*10^{13}}$

$.2*10^{-6}$

$2*10^{-7}$

1. $\frac{3.6 * 10^{12}}{3 * 10^{7}}$

$1.2 * 10^{5}$

2. $3.12 * 10^{8} * 2 * 10^{5}$

$6.24 * 10^{13}$

3. $3 * 10^{-6} + 3 * 10^{-4}$

$.000003$
$+ .0003$
$.000303$

$3.03 * 10^{-4}$

4. $9.6 * 10^{5} - 5 * 10^{4}$

960000
$- 50000$
910000

$9.1 * 10^{5}$

5. $6.402 * 10^{47} - 2.6 * 10^{47}$

6.1402
$- 2.600$

$3.802 * 10^{47}$