

## Dividing with Scientific Notation

Big Ideas--Exponent rules of multiplication remain the same--add the exponents.

- Steps:
1. Analyze the problem.
  2. Divide the mantissas.
  3. Subtract the base ten Exponents.
  4. Adjust the mantissa (if needed).

Examples:

$$\frac{(1.5 \times 10^7)}{(5 \times 10^4)}$$

$$\begin{array}{l} 0.3 \cdot 10^3 \\ \hline 3 \cdot 10^2 \end{array}$$

$$\frac{(1.8 \times 10^2)}{(3 \times 10^6)}$$

$$\begin{array}{l} 0.6 \cdot 10^{-4} \\ \hline 6 \cdot 10^{-5} \end{array}$$

The half-life of Uranium 234 is  $2.5 \times 10^5$  years and the half-life of Plutonium is  $8 \times 10^7$  years. How many times greater is the half-life of Plutonium than Uranium 234?

$$\frac{8 \cdot 10^7}{2.5 \cdot 10^5}$$

$$3.2 \cdot 10^2$$