

Add/Subtract Scientific Notation (3-4)

Example 1: Adding & Subtracting Scientific Notation

- Step 1:** Rewrite so the powers are the same
Step 2: Add or subtract the first factors
Step 3: Rewrite in scientific notation

I Do	We Do
$5.97 \times 10^{24} + 7.35 \times 10^{22}$	$1.02 \times 10^{26} + 4.87 \times 10^{24}$
$5.97 \times 10^{22} + 7.35 \times 10^{22}$	$102 \times 10^{24} + 4.87 \times 10^{24}$
$\begin{array}{r} 5.97 \\ + 7.35 \\ \hline 604.35 \end{array} \times 10^{22+2}$	$106.87 \times 10^{24+2}$
6.0435×10^{24}	1.0687×10^{26}

Example 2: Multiplying Scientific Notation

- Step 1:** Multiply the first factors
Step 2: Multiply the powers of ten
Step 3: Rewrite in scientific notation

$$(3.1 \times 10^6) \times (6.42 \times 10^{23})$$

$$19.902 \times 10^{29+1}$$

$$1.9902 \times 10^{30}$$

Example 3: Dividing Scientific Notation

- ~~1~~ Step 1: Divide the first factors
- ~~2~~ Step 2: Divide the powers of ten
- ~~3~~ Step 3: Rewrite in scientific notation

$$(1.89 \times 10^{27}) \div (5.97 \times 10^{24})$$
$$\frac{1.89 \times 10^{27}}{5.97 \times 10^{24}} \quad 10^{27-24}$$
$$0.317 \times 10^{3-1}$$
$$3.17 \times 10^2$$