

4.5 Compute in Scientific Notation

$$(1.4 \times 10^4)(7.6 \times 10^5)$$

$$\begin{array}{r} \overset{2}{14} \\ \times 76 \\ \hline 184 \\ + 980 \\ \hline 1064 \end{array}$$

$$10.64 \times 10^9$$

$$1.064 \times 10^1 \times 10^9$$

$$1.064 \times 10^{10}$$

You try!

$$1. (2.3 \times 10^3)(1.8 \times 10^{-5})$$

$$\begin{array}{r} \overset{2}{23} \\ \times 18 \\ \hline 184 \\ + 230 \\ \hline 414 \end{array}$$

$$4.14 \times 10^{-2}$$

Evaluating Expressions in Scientific Notation

$$\frac{1.2 \times 10^{-1}}{4.8 \times 10^{-4}}$$

$$1.2 \div 4.8 \quad 10^{-1+4}$$

$$48 \overline{) 102.}$$

$$\begin{array}{r} 0.25 \\ 48 \overline{) 102.00} \\ \underline{-96} \\ 240 \\ \underline{-240} \\ \end{array}$$

$$0.25 \times 10^3$$

$$2.5 \times 10^{-1} \times 10^3$$

$$2.5 \times 10^2$$

You try!

$$2. \frac{5.2 \times 10^3}{1.3 \times 10^1}$$

$$5.2 \div 1.3 \quad 10^{3-1}$$

$$103 \overline{) 52.}$$

$$\begin{array}{r} 4. \\ 13 \overline{) 52.0} \\ \underline{-52} \\ \end{array}$$

$$4 \times 10^2$$

You try!

3. $(6.4 \times 10^{-5}) (12,000)$

$$(6.4 \times 10^{-5}) (1.2 \times 10^4)$$

$$\begin{array}{r} 64 \\ \times 12 \\ \hline 128 \\ + 640 \\ \hline 768 \end{array}$$

$$7.68 \times 10^{-1}$$

You try!

4. $\frac{462,000}{1.4 \times 10^{-9}} = \frac{4.62 \times 10^5}{1.4 \times 10^{-9}} = 3.3 \times 10^{14}$

$$4.62 \div 1.4 \quad 10^{5+9}$$

$$1.4 \overline{) 4.62}$$

$$\begin{array}{r} 3.3 \\ 14 \overline{) 462} \\ \underline{42} \\ 42 \\ \underline{42} \\ 0 \end{array}$$