OPERATIONS WITH SCIENTIFIC NOTATION: GUIDED NOTES

Multiplying Numbers in Scientific Notation

Step 1) Multiply the _____.

Step 2) _____ the exponents.

Step 3) Rewrite the result in scientific notation.

Remember the number before the decimal point should be _____.

Example $(2.5\times10^{2})\cdot(8.1\times10^{5})$

Step 1) $(2.5)\cdot(8.1)=$

Step 2) $(10^{2})\cdot(10^{5})=$

Step 3) Is _____ written in scientific notation? Why or why not?

Rewriting Numbers in Scientific Notation

Step 1) Move the decimal in the number so there is only _____ before it.

Step 2) Count the number of places and note _____ you moved the decimal.

Step 3) Change the exponent:

- If you moved the decimal _____, add the number of places to the exponent.
- If you moved the decimal _____, subtract the number of places from the exponent.

How could we write _____ in scientific notation?

Examples

Write each product in scientific notation. Round each answer to two decimal places.

(a) $\left(3.6\times10^{3}\right)\cdot\left(5.8\times10^{4}\right)$

(b) $\left(9.5\times10^{6}\right)\cdot\left(1.2\times10^{2}\right)$

(c) $\left(4.7\times10^{-3}\right)\cdot\left(8.1\times10^{-5}\right)$

(d) $\left(2.9\times10^{-1}\right)\cdot\left(5.8\times10^{-4}\right)$

Dividing Numbers in Scientific Notation

Step 1) Divide the _____.

Step 2) _____ the exponents.

Step 3) Rewrite the result in scientific notation.

Examples

Write each quotient in scientific notation. Round each answer to two decimal places.

(a) $\left(8.0\times10^{6}\right)\div\left(4.3\times10^{2}\right)$

(b) $\left(5.1\times10^{3}\right)\div\left(3.8\times10^{7}\right)$

(c) $\dfrac{1.2\times10^{-5}}{7.2\times10^{3}}$

(d) $\dfrac{2.5\times10^{-4}}{6.1\times10^{-2}}$