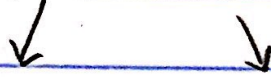


# Scientific Notation

5

Sci. Not. is a shorter way to write large/small numbers.

$$\text{ex: } 4.12 \times 10^5$$



greater than or  
equal to 1

power of 10

AND less than 10  
(1, 2, 3, 4, 5, 6, 7, 8, 9)

## Writing Numbers in Sci. Not.

- ① MOVE decimal to make a number between 1 and 10.
- ② IF number is less than 1, exponent is NEGATIVE!  
< 1
- ③ IF number is greater than 1, exponent is POSITIVE!  
> 1

$$\text{ex 1) } \underbrace{345.68}_{2} \rightarrow 3.4568 \times 10^2$$

$$\text{ex 2) } \underbrace{1,204,000,000}_{9} \rightarrow 1.204 \times 10^9$$

$$\text{ex 3) } \underbrace{0.0000456}_{5} \rightarrow 4.56 \times 10^{-5}$$

$$\text{ex 4) } \underbrace{0.0027}_{3} \rightarrow 2.7 \times 10^{-3}$$



## Writing Numbers in Standard Form

- ① Move decimal the same number of times as the exponent.
  - ② Move **left** if exponent is **negative**.
  - ③ Move **right** if exponent is **positive**.
- \* Use zeros as placeholders

ex1)  $1.09 \times 10^3 = 1,090$   
1,090

ex2)  $3.078 \times 10^{-4} = 0.0003078$   
0.0003078

ex3)  $5.001 \times 10^5 = 500,100$   
500,100

ex4)  $7.87 \times 10^{-6} = 0.00000787$   
0.00000787