

# Worksheet

- **Physics & Major Sciences**
  - **Physics** – the science of \_\_\_\_\_ and energy
  - **Chemistry** - the science of the composition, properties, and reactions of \_\_\_\_\_
  - **Biology** - the science of \_\_\_\_\_ organisms
- **Nature has Rules**
  - You can better play the game when you know the rules.
  - \_\_\_\_\_ is nature’s rule book.
  - \_\_\_\_\_ shows how everything in nature is interconnected.

## ***SIG FIGS*** and **Scientific Notation**

- Put into ***SIG FIGS*** and **Scientific Notation**
  - **6.02 x 10<sup>23</sup>** accurate to 1 digit →
  - **6.02 x 10<sup>23</sup>** accurate to 2 digits →
  - **6.02 x 10<sup>23</sup>** accurate to 3 digits →
  - **6.02 x 10<sup>23</sup>** accurate to 4 digits →
  - *A student weighed herself at 100 pounds.  
The scale could be read accurately to within a pound.  
She wanted to know how many kilograms she weighed.  
One pound equals 0.45359237 kilograms.  
Report her weight.*
  - **600,000,000,000,000,000,000,000** -> \_\_\_\_\_
  - **4,000,000,000** -> \_\_\_\_\_
  - **602,214,199,000,000,000,000,000** -> \_\_\_\_\_

## Estimation

$$\textcircled{1} \quad 99/8 \times 5,280 + 3 \times 3 \times 10^{16} - 55/5 \times 9 \times 10^3 =$$

$$\textcircled{2} \quad 7.09 \times 10^{55} / 903 \times 10^{30} \times 6.02 \times 10^{23} / 93 \times 10^6 =$$

$$\textcircled{3} \quad 17 \times 8 \times 10^9 \times 4.1 \times 10^{-8} + 35 \times 10^{15} - 100,399 =$$

$$\textcircled{4} \quad \frac{560 \times 10^{-4}}{3 \times 10^4} \times \frac{240,000}{10^{-50}} \times \frac{1.06 \times 10^{-72}}{5.89} \times \frac{6.02 \times 10^{23}}{3.9 \times 10^0} =$$