

# Significant Figures, Math, and Rounding Cheat Sheet

## How to Determine Sig Figs.....

1. All non zero numbers **are** significant
  1. Ex. 982.15 kg  $\rightarrow$  5 sig figs
2. Leading zeros **are not** significant
  1. Ex. 0.00472  $\rightarrow$  3 sig figs
3. Captive zeros **are** significant
  1. Ex. 10.3  $\rightarrow$  3 sig figs
4. **Trailing** zeros **are not** significant **unless** a decimal is present
  1. Ex. 100  $\rightarrow$  1 sig fig
  2. Ex. 100.  $\rightarrow$  3 sig figs
  3. Ex. 0.04200  $\rightarrow$  4 sig figs

## How to determine sig figs for multiplying and dividing....

1. When multiplying, dividing, squaring, etc. your final answer should only have as many sig figs as your **least** accurate measurement

$$\begin{array}{ll} \text{Ex. } 4.01 * 7.0 = 28 & 3 \text{ sig figs} * 2 \text{ sig figs} = 2 \text{ sig figs} \\ \text{Ex. } 4.0 * 7 = 30 & 2 \text{ sig figs} * 1 \text{ sig figs} = 1 \text{ sig figs} \end{array}$$

## How to determine sig figs for adding and subtracting.....

1. Line numbers up so each place is aligned
2. Add or subtract the numbers
3. Draw a line to the right of the least accurate place
4. Whichever place is the **least** accurate that is where you stop

$$\text{Ex. } 52.0 + 6005 + 2.3 =$$

$$\begin{array}{r} 52.0 \\ 6005 \quad \rightarrow \text{least accurate} \\ \hline 2.3 \\ \hline 6059.3 \rightarrow 6059 \end{array}$$

## How to round numbers.....

Numbers ending in **1-4**  $\rightarrow$  **Round Down**

$$\begin{array}{l} \text{Ex. } 732.4 \rightarrow 732 \\ \text{Ex. } 237.2 \rightarrow 237 \end{array}$$

Numbers ending in **6-9**  $\rightarrow$  **Round Up**

$$\begin{array}{l} \text{Ex. } 732.8 \rightarrow 733 \\ \text{Ex. } 237.6 \rightarrow 238 \end{array}$$

Numbers ending in **0**  $\rightarrow$  **Do Not Round**

$$\begin{array}{l} \text{Ex. } 732.0 \rightarrow 732.0 \\ \text{Ex. } 237.0 \rightarrow 237.0 \end{array}$$

Numbers ending in **5**  $\rightarrow$  **Round to Nearest Even Number**

$$\begin{array}{l} \text{Ex. } 732.5 \rightarrow 732 \\ \text{Ex. } 237.5 \rightarrow 238 \end{array}$$