Name: **GRADE = (your score / 15)*100**

UBSP-Summer 2019 – Quiz #1

1) List 3 steps of the Scientific Method:

a) **Observation/question**

b) **Hypothesis**

c) **Experiment**

2) How many significant figures are in each of the following numbers?

a) 6.626×10^{-34} **4** b) 0.0065300 **5** c) 100 **1**

3) Round each of the following numbers to 3 significant figures. (Scientific notation is optional on this question)

a) 0.0659822 **0.0660** or **6.60×10^{-2}** b) 0.00547330 **0.00547** c) 8265391000 **8270000000** or **8.27×10^{9}**

4) Perform the following calculations and report your answers with the correct number of significant figures.

a) 2500.0 + 1.236 + 367.01 b) 0.002354 x 17.917 c) $\frac{2160.0}{27}$

2868.2 **0.04218 or 4.218×10^{-2}** **80. or 8.0×10^{1}**

5) Perform the following conversions:. (Show your work, sig. figs count!)

1m = 1000 mm, 1km= 1000 meters, 1 m = 3.281 ft, 1.0×10^{6} µm = 1m

A) 285, 000 mm →km

$$285,000\ mm \times \frac{1m}{1\,000\ mm} \times \frac{1km}{1000\ m} = \boxed{0.285km}$$

B) 25.0 mL → L

$$25.0\ mL \times \frac{1L}{1000\ mL} = \boxed{0.0250mL}$$

C) 8.00 ft → µm

$$8.00\ ft \times \frac{1m}{3.281\ ft} \times \frac{1000000\mu m}{1m} = \boxed{0.285\mu m}$$

7) Bonus--Steve experimentally found the density of Aluminum to be 2.59 g/cm^3. The density of Aluminum is known to be 2.70 g/cm^3. What is Steve's percent error?

$$\%\ \text{error} = \frac{(2.59-2.70)}{2.70} * 100 = 4.07\%$$