**Quiz 3A**

# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Calcium is added to fireworks to produce a red color at 603 nm (5 points).
	1. What is the wavelength in m?

$$603 nm×\frac{10^{-9} m}{1 nm}=6.03×10^{-7} m$$

* 1. What is the frequency (c = 3.00 × 108 m/s)?

$$λ=\frac{c}{ν}⇒ν=\frac{c}{λ}=\frac{3.00×10^{8}\frac{m}{s}}{6.03×10^{-7} m}=4.975124378×10^{14}\frac{1}{s}≈4.98×10^{14}\frac{1}{s}$$

1. Put the following forms of visible light in order of increasing wavelength: orange, blue, green (3 points).

Blue < green < orange

1. Is this week’s experiment a wet lab or a dry lab (1 point)? \_\_\_\_\_wet lab
2. Are the following statements true or false (6 points)?

|  |  |  |
| --- | --- | --- |
|  | Use the same balance throughout an experiment to minimize any systematic errors in the weighing process.  | True |
|  | It is okay to write your measurements down on scratch paper and then transfer them to your data sheet so that it looks nice.  | False |
|  | If your hair or clothing should catch on fire one option is to smother it using a fire blanket.  | True |
|  | Sweep up breakage immediately and place it in the broken glass box.  | True  |
|  | If a chemical spills on your hand, you should immediately go to the sink, rinse your hand for at least 15 minutes, and inform your instructor.  | True  |
|  | You only need to wear your safety glasses or goggles when you are working with chemicals or flames.  | False  |