**HPS Station Review Lab 2021** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per \_\_\_\_\_

The goal of this lab is refresh your memory on some of the topics we have covered this unit. If you are at a lab that requires a measurement, please make sure you record your measurement in case you need to finish the calculations at home. Please follow the directions at each station.

**Station 1: Wave machine**

1. Record/calculate the following data:

|  |  |  |
| --- | --- | --- |
| Total Number Wavelengths: | Frequency: | Period: |
| Wavelength: | Wave Speed: | Amplitude: |

2. Draw a transverse wave and label its properties

**Station 2: Diffraction Grating and Laser**

Shine the laser through the diffraction grating.

1. Draw the pattern you see and explain why it occurs.

2. Justify how you know that it is diffraction.

**Station 3: Refraction**

1. Observe a wave being sent through a new medium. What behavior do you see? Justify your answer.

**Station 4: Magnifying Glass**

1. What behavior does a magnifying glass utilize? How can this be used to help us everyday?

 **Station 5: PHET: Waves on A String – Reflection**Google “Waves on a String” Phet. Turn damping to none.

1. Using the simulation, draw what happens when you click “pulse” when the wave hits a fixed end.

2. Now click “loose end” and draw what happens.

 **Station 6: PHET: Waves on A String – Interference**

Google “Waves on a String” Phet. Turn damping to none.

1. Using the simulation, draw and explain the two types of interference. Measure the amplitudes. It is best to have the end loose and send two pulses.

**Station 7: Color Mixer**

1. Change varying parts of the simulation. Describe and illustrate what wave behaviors do you observe.

2. Justify your answer.

**Station 8: Photoelectric Effect**

1. This is a solar panel. How does it utilize the photoelectric effect?