

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Unit 3.12

### The Photoelectric Effect

1. Which color of light has the highest frequency: red or green?
2. Hydrogen emits light with a wavelength of 410 nm. Find the frequency of this light.
3. A radio station broadcasts at a frequency of 106.9 kHz. What is the wavelength of this radio signal in nm?
4. Can prolonged exposure to highly intense infrared light cause electrons to be ejected from a clean metal surface? Explain.
5. Explain why every element has a distinct atomic emission spectrum.
6. An electron is promoted from the  $n=2$  to the  $n=3$  energy level in a hydrogen atom. Does the electron release or absorb energy during this transition?
7. What is the difference between a continuous spectrum and an atomic emission spectrum?