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Name: _____

Section: _____ Date: _____

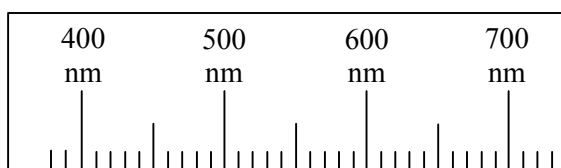
Instructor: _____

REPORT FOR ATOMIC SPECTRA AND FLAME TEST

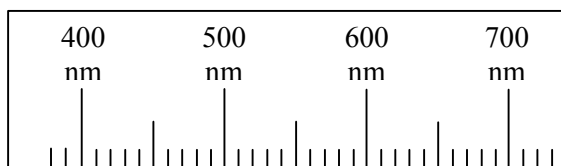
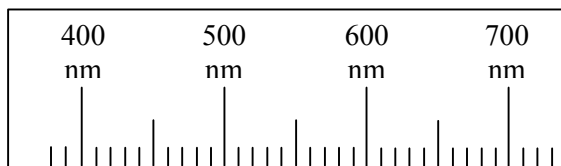
Part 1: Atomic Spectra**Observations of Various sources of light**

Sketch on the scale provide your observations while viewing through the spectroscope. Write above the scale some of the stronger lines you observe the color that corresponds to the individual lines.
(*R for red, Y for yellow, B for blue and so on*)

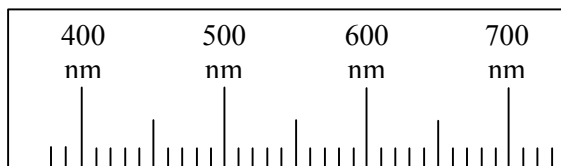
Sunlight:



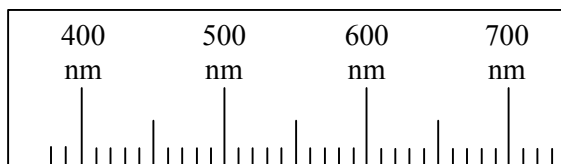
Room Lights

H₂

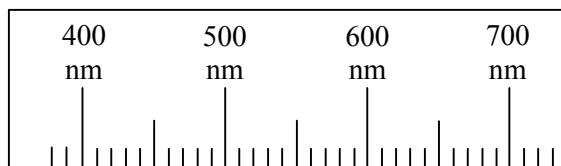
He



Ne



Hg

**Questions:**

1. What wavelength range corresponds to light that appears blue?

How about the red?

2. Refer to your sketch of the H₂ spectrum. Which line (color and approximate wavelength) has the highest energy? Which has the lowest?

3. If light that results from an electron dropping from the 3rd energy level to the 2nd energy level is blue and light resulting from an electron dropping from the 4th energy level to the 3rd is red, what can you say about the relative magnitudes of each energy gap. (2 and 3 vs. 3 and 4)

Part 2 Flame test:

<u>Solution</u>	<u>Observations</u>
LiCl	
CuCl ₂	
KCl	
BaCl ₂	
NaCl	
SrCl ₂	
CaCl ₂	

Questions:

1. Which metal do you think road flare manufactures use to produce the color you see?

2. Let's say you are cooking with salted water and your mom or dad notices the brilliant yellow color that occurs when the salted water spills onto the flame. How would you explain this observation in terms of energy levels and the pre-lab discussion? A few sentences will do.