Name: _____

PRE-LAB #14
PHYICAL OPTICS: INTERFERENCE & DIFFRACION

Before starting the laboratory session, be sure read *Investigation #14: Physical Optics: Interference & Diffraction* and then answer the following questions.

1. What properties of light are necessary to observe sustained interference and diffraction effects?

2. Describe the set-up that you will use to observe diffraction and interference effects. What equipment will you use?

3. What is the small angle formula and what relationship between the slit separation and slit/screen distance is necessary to be able to use the small angle formula in this investigation?

4. For single-slit diffraction, what do you predict will happen to the diffraction pattern if you increase the width of the slit?

5. For constructive interference to occur at the screen, what is required of the path difference between the rays emerging from each slit and reaching the screen?

6. In **Part III-B** of this investigation, you will examine multi-slit arrangements. In particular, what comparison(s) will you make?