QUESTIONS TO HAND IN – EXPERIMENT 15

NAME_____

LAB INSTRUCTOR_____LAB DAY/TIME_____

1. The diffraction relation (eqn. 1) predicts the thinner the diffracting object, the (circle one) **narrower/wider** is the central diffraction peak.

2. Name some instances when you have observed diffraction outside of the laboratory setting.

3. Horsehair is much thicker than human hair. Do you expect the diffraction peak for a strand of horsehair to be wider or narrower than that from a human hair?

4. The central peak in a diffraction pattern is much more intense than the next order maxima. Use the plot in Fig. 15-1 to estimate the ratio of intensities.

5. How thin would your hair have to be in order for the central diffraction maximum to span $\pm45°$ on either side of the centerline? Assume red laser light with $\lambda = 650$ nm.