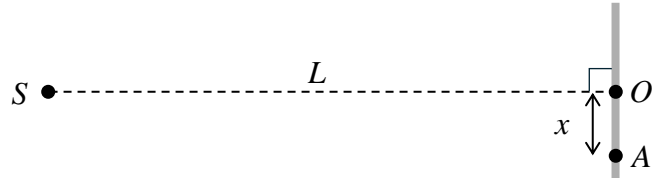

LAB 11 PRE-LAB

1. A projection screen is a distance L from a light source. Define the origin O as the point on the screen closest to the light source S . A point A on the screen is a distance x from the origin. What is the formula for $\angle OSA$, the angular separation between O and A ? Express in terms of L and x .



2. Light of wavelength λ passes through a single slit of width w .
 - A. What is the formula for the angles at which light from the slit interferes destructively? Express in terms of λ , w , and an integer m .
 - B. What is the formula to use to calculate the wavelength of light making a single slit diffraction pattern if you know an angle θ_m , its order m , and the slit width w ?
2. Light of wavelength λ passes through two slits separated by a distance d . What is the condition for the angle at which the light from the two slits interferes destructively? Express in terms of λ , d , and an integer m .
3. In a diffraction grating with line spacing w , what is the angle at which light of wavelength λ will have its first bright spot?