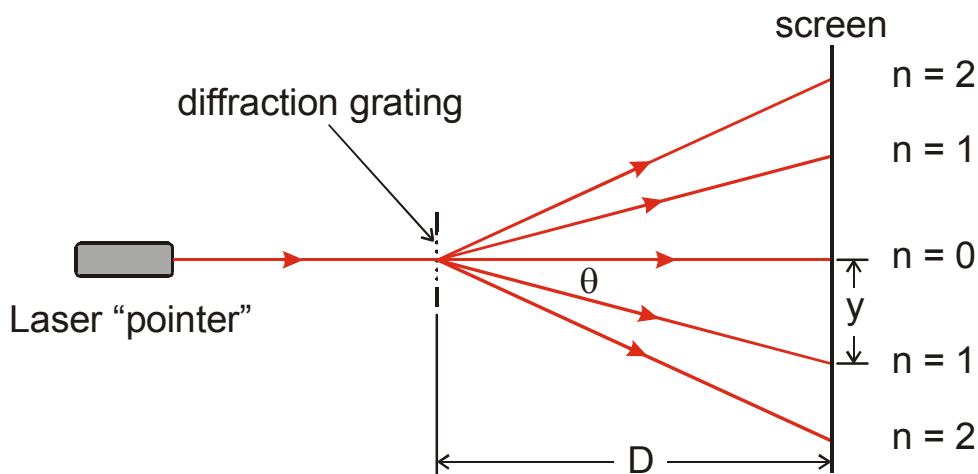


Observing Diffraction of Light using a Low Power Laser

Never look directly at a laser light source.

1. Observe and draw the diffraction patterns produced by
 - a) single slits of different widths (note the width of the slit)
 - b) double slits of different slit separation (note the slit widths and separations)
 - c) multiple slits (note the number of slits per mm)
2. Use a diffraction grating to measure the wavelength, λ , of the laser light.



For constructive interference

$$n\lambda = d \sin \theta$$

where n = the order of the image (0, 1, 2...)

d = the distance between two lines of the grating

θ = the angular position of the image (measured from the normal to the grating)

By measuring D and y , θ can be found.

We can then calculate the wavelength, λ .