

### Quiz 27.1A

Light of wavelength 623 nm is incident on two slits separated by 0.120 mm, and the resulting interference pattern is projected on a screen 3.50 meters away. For clarity, I have labeled the minima and maxima for the top half of the pattern projected on the wall in the figure below.

- a) What is the path difference, in waves, for the light rays from the two slits that strike the location of the third minimum?
- b) What is the distance (in cm) between the central maximum and the third minimum?
- c) If the slit separation increases, does your answer for part (a) increase, decrease or stay the same?  
Assume no change in wavelength or L for this part.
- d) If the slit separation increases, does your answer for part (b) increase, decrease or stay the same?  
Assume no change in wavelength or L for this part.

