

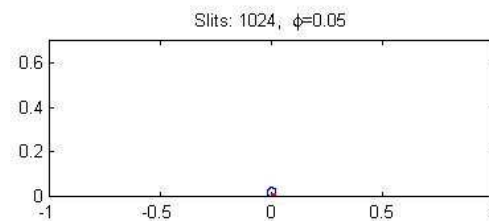
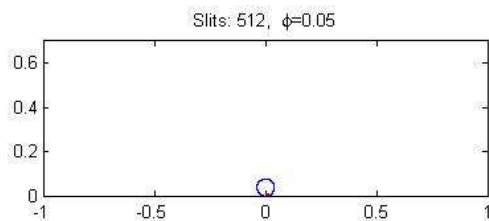
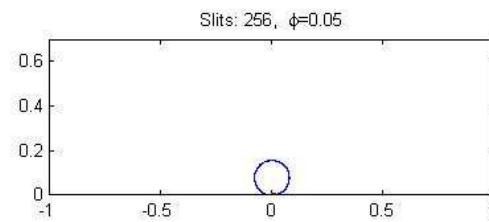
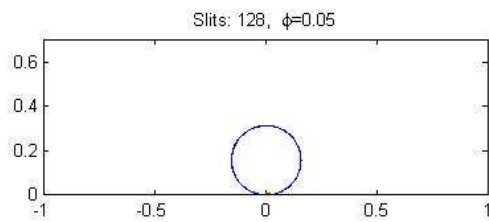
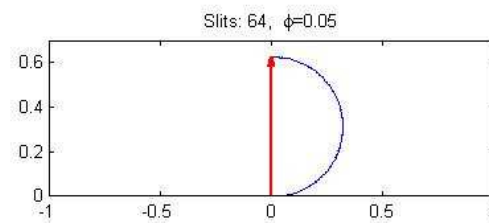
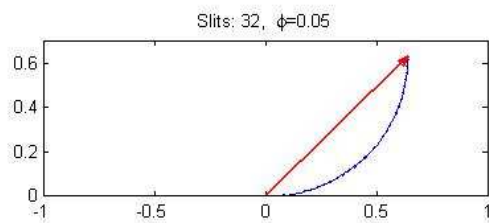
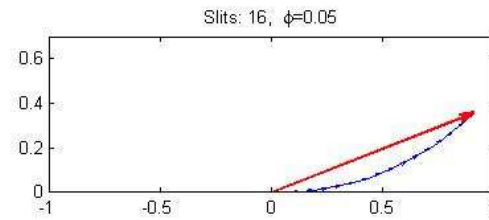
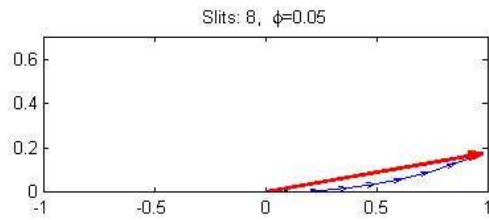
Given a small phase difference,  $\phi$ , between adjacent slits, if the total number of slits,  $N$ , is increased, the intensity (compared to peak intensity) at a given angle  $\theta$

a) Increases with larger  $N$

b) Decreases with larger  $N$

c) Stays the same

## Multi-Slit Phasors at a small, fixed angle



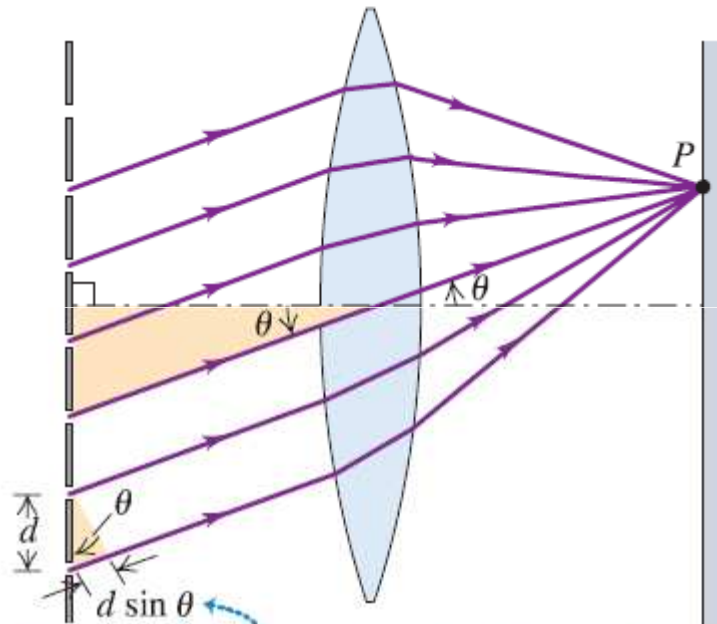
Do the position of the spectral lines that you see change as you change the distance from your eye to the diffraction grating?

a) no

b) yes

c) Depends on the wavelength

**36.13** Multiple-slit diffraction. Here a lens is used to give a Fraunhofer pattern on a nearby screen, as in Fig. 36.4d.



Maxima occur where the path difference for adjacent slits is a whole number of wavelengths:  
 $d \sin \theta = m\lambda$ .