



For F to be a point of destructive interference, every point of light in the slit has to cancel out with another point of light that has a path of  $1/2 \lambda$  longer or shorter than its. So,  $CF = AF + \lambda$ .

In triangle ACD:

$$\sin \Theta_1 = \frac{\lambda}{w}$$

In triangle BFG:

$$\sin \Theta_2 = \frac{x}{L''} \approx \frac{x}{L},$$

since  $L \approx L''$  for large  $L$ .

*See blow-up of diagram.*