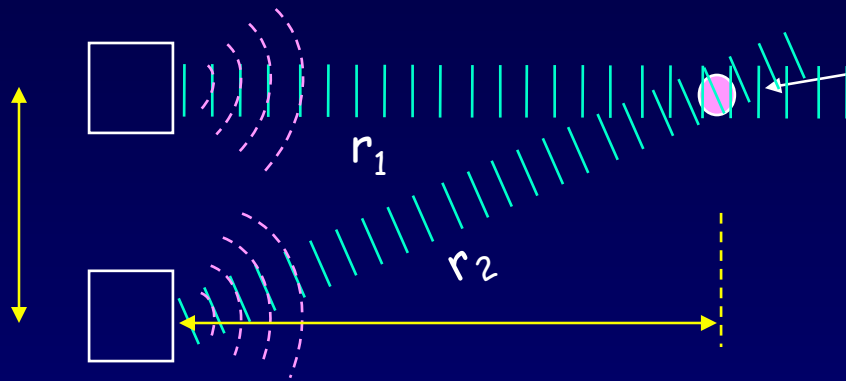


Interference Exercise

The relative phase of two waves also depends on the relative distances to the sources:



The two waves at this point are “out of phase”. Their phase difference ϕ depends on the path difference $\delta \equiv r_2 - r_1$.

Path difference	Phase difference		I
δ	ϕ	$A = 2A_1 \cos(\phi/2)$	
0			
$\lambda/4$			
$\lambda/2$			
λ			

Each fraction of a wavelength of path difference gives that fraction of 360° (or 2π) of phase difference:

$$\frac{\phi}{2\pi} = \frac{\delta}{\lambda}$$