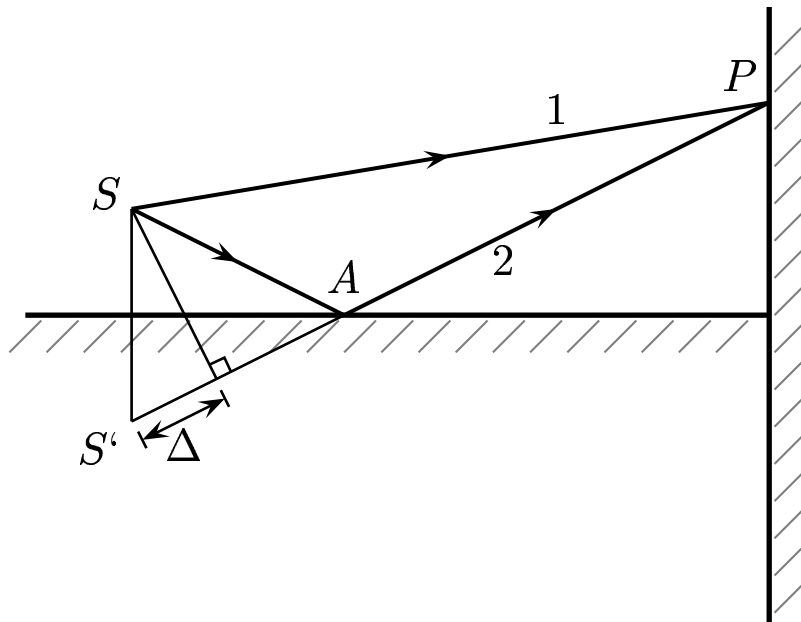


Consider the superposition of a direct ray, #1 and a reflected ray, #2 at P , where reflection is by a mirror at A .



Find $k \Delta$ values which lead to maxima.

- A) $k \Delta = \pi, 3\pi, 5\pi \dots$
- B) $k \Delta = 0, 2\pi, 4\pi \dots$

$$\phi = \phi_{path} + |\phi_{refl1} - \phi_{refl2}|.$$

For the present set up, $\phi_{path} = k \Delta$. The phase angle contributed by the reflection is: $|0 - \pi| = \pi$. So maxima occur where the phase angle is:

$$\phi = 0, 2\pi, 4\pi, \dots = k \Delta + \pi.$$

In other words $k \Delta = \pi, 3\pi, 5\pi \dots$

Answer **A**.