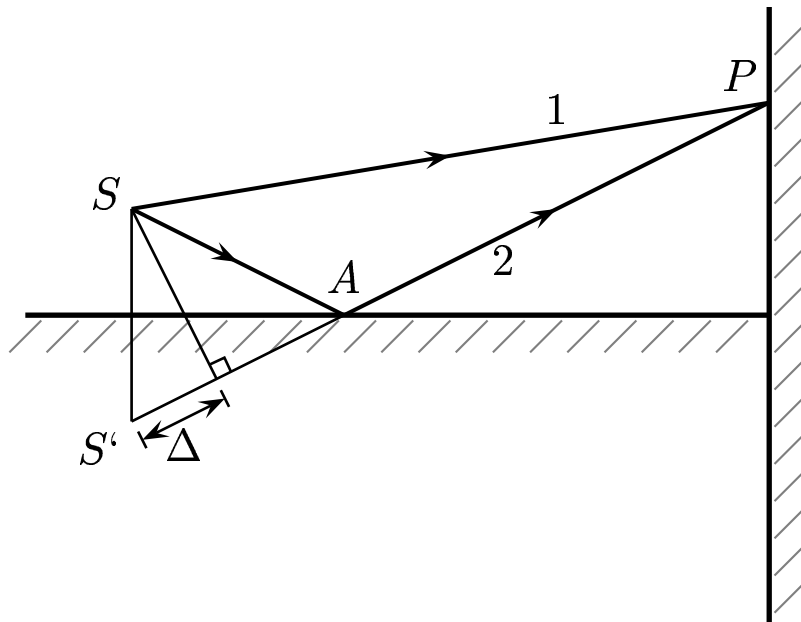


Consider the superposition of a direct ray, #1 and a reflected ray, #2 at  $P$ , where reflection is by a mirror at  $A$ .



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**.