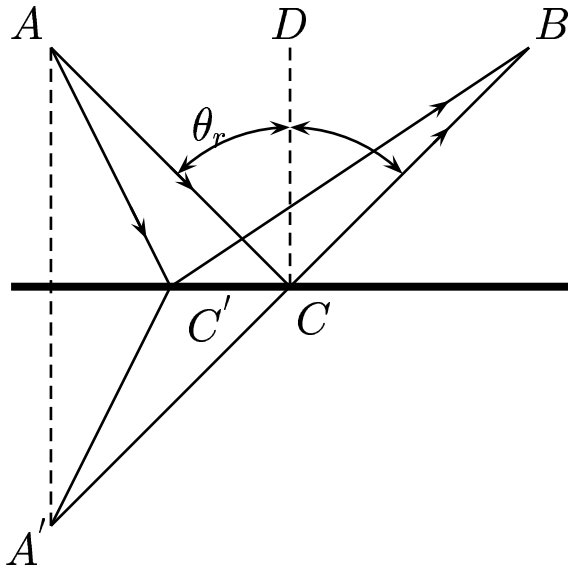


Given: Compare the time for light to travel from  $A$  to  $B$  along the path  $ACB$ , where the angle of incidence equals to the angle of reflection, i.e.  $\theta_i = \theta_r$ . to that along  $AC'B$ .



Among the three paths illustrated which path is closest to the least time?

- A)  $t_{AC'B} > t_{ACB}$ .
- B)  $t_{AC'B} = t_{ACB}$ .
- C)  $t_{AC'B} < t_{ACB}$ .
- D) can't be determined.

The distance from  $A'$  to  $B$ , via  $C'$  is farther than that via  $C$ ; i.e.,  $A'C'B > A'CB$ . By inspection, one sees that  $AC' = A'C'$ , and  $AC = A'C$ . So  $AC'B > ACB$ . In other words,  $t_{AC'B} > t_{ACB}$ .

Answer **A**.