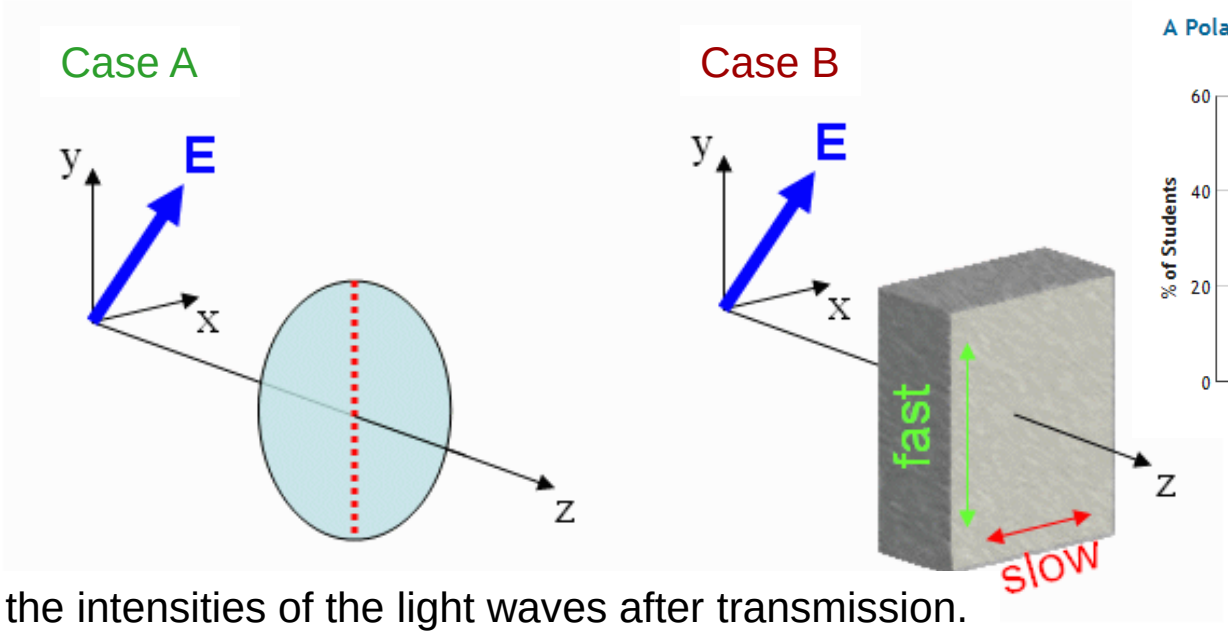
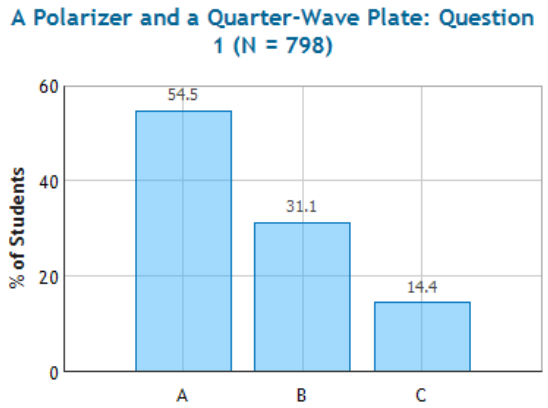
CheckPoint 2a

Identical linearly polarized light at 45° from the y-axis and propagating along the z axis is incident on two different objects. In Case A the light intercepts a linear polarizer with polarization along the y-axis In Case B, the light intercepts a quarter wave plate with fast axis along the y-axis.





Compare the intensities of the light waves after transmission.

A. $I_A < I_B$ **B.** $I_A = I_B$ **C.** $I_A > I_B$

Case A:

E_x is absorbed

$$I_A = I_0 \cos^2(45^o)$$

$$I_A = \tfrac{1}{2} I_0$$

Case B:

(E_x, E_y) phase changed

$$I_B = I_0$$