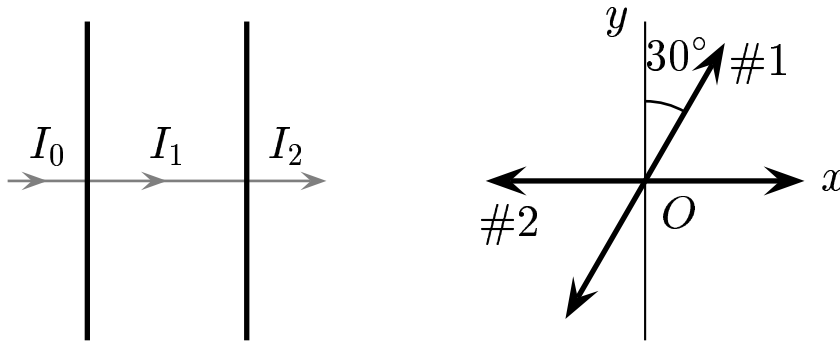


Consider the setup shown. Incident beam with intensity I_0 is polarized along the y -axis. Assume #1 transmission axis is 30° with respect to the y -axis, and that of #2 is along the x -axis.



Find the final intensity I_2 .

- A) $I_2 = \frac{3 I_0}{16}$.
- B) $I_2 = \frac{3 I_0}{8}$.
- C) $I_2 = \frac{I_0}{4}$.
- D) $I_2 = \frac{I_0}{2}$.

Polarized light $I = I_0 \cos^2 \alpha$.

$$I_1 = I_0 \cos^2 30^\circ = \frac{3 I_0}{4}.$$

$$I_2 = I_1 \cos^2 60^\circ = \frac{3 I_0}{16}.$$

Answer **A**.