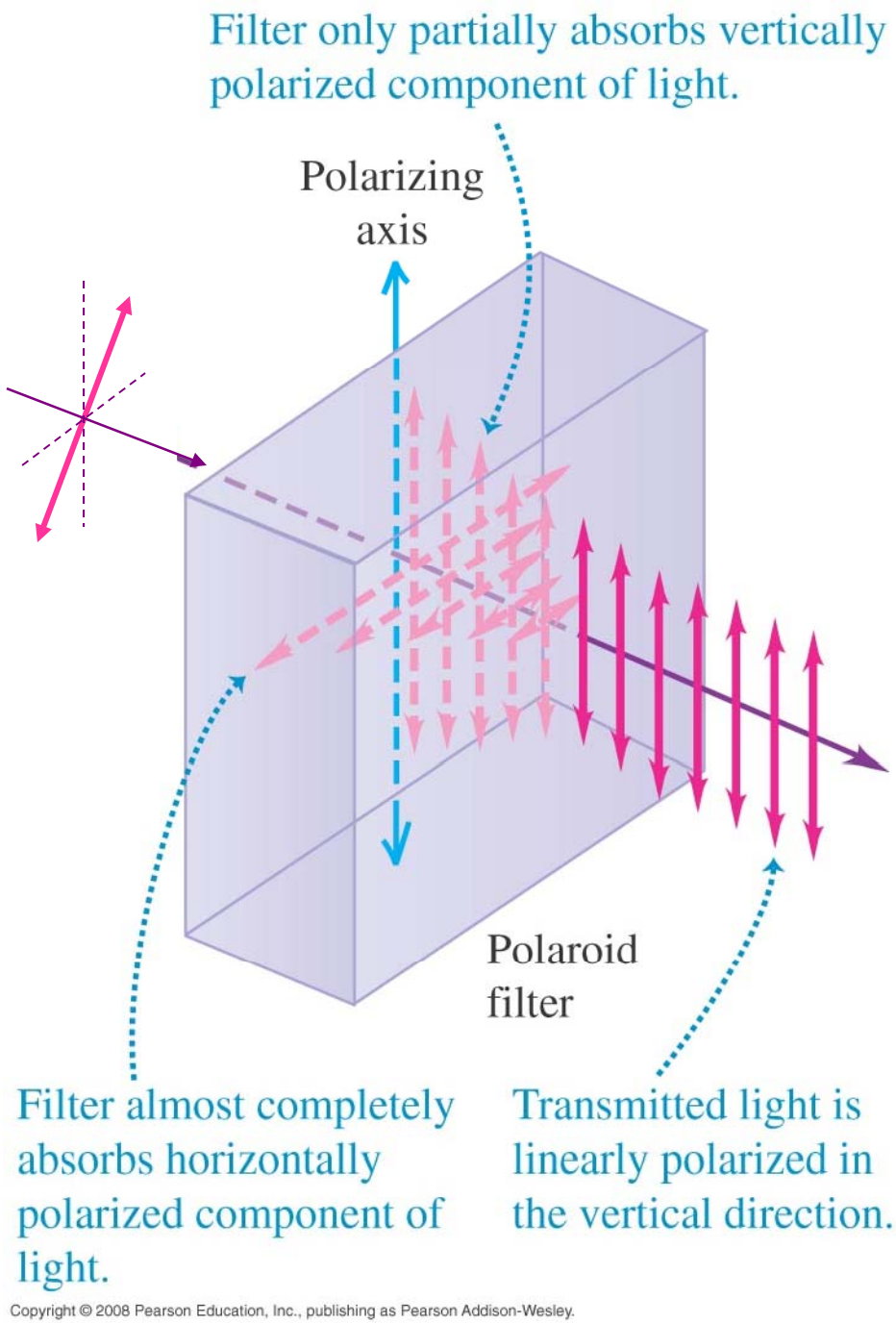
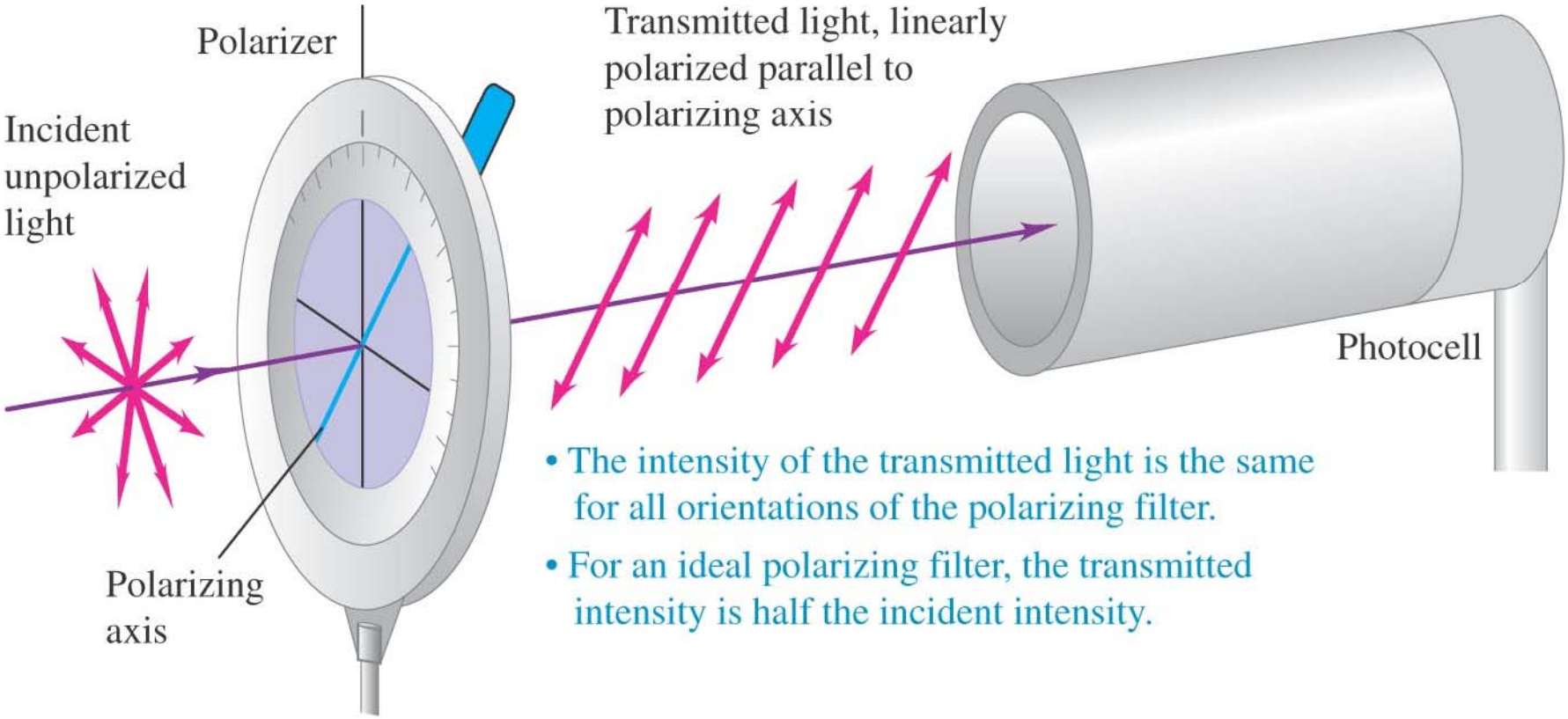
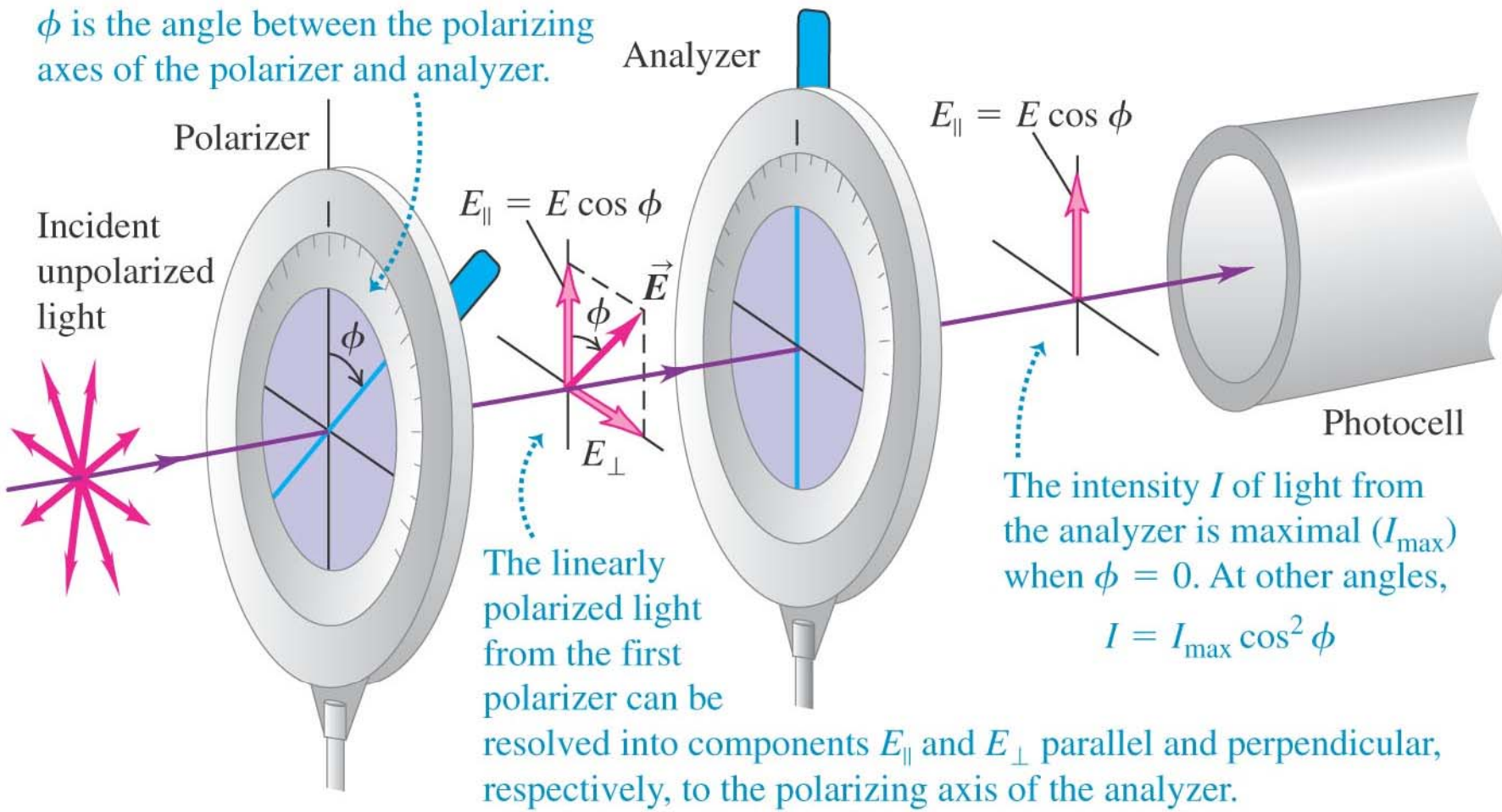




- The intensity of the transmitted light is the same for all orientations of the polarizing filter.
- For an ideal polarizing filter, the transmitted intensity is half the incident intensity.



Q33.5

Three polarizing filters are stacked with the polarizing axes of the second and third filters oriented at 45° and 90°, respectively, relative to the polarizing axis of the first filter. Unpolarized light of intensity I_0 is incident on the first filter. The intensity of light emerging from the third filter is

A. I_0.

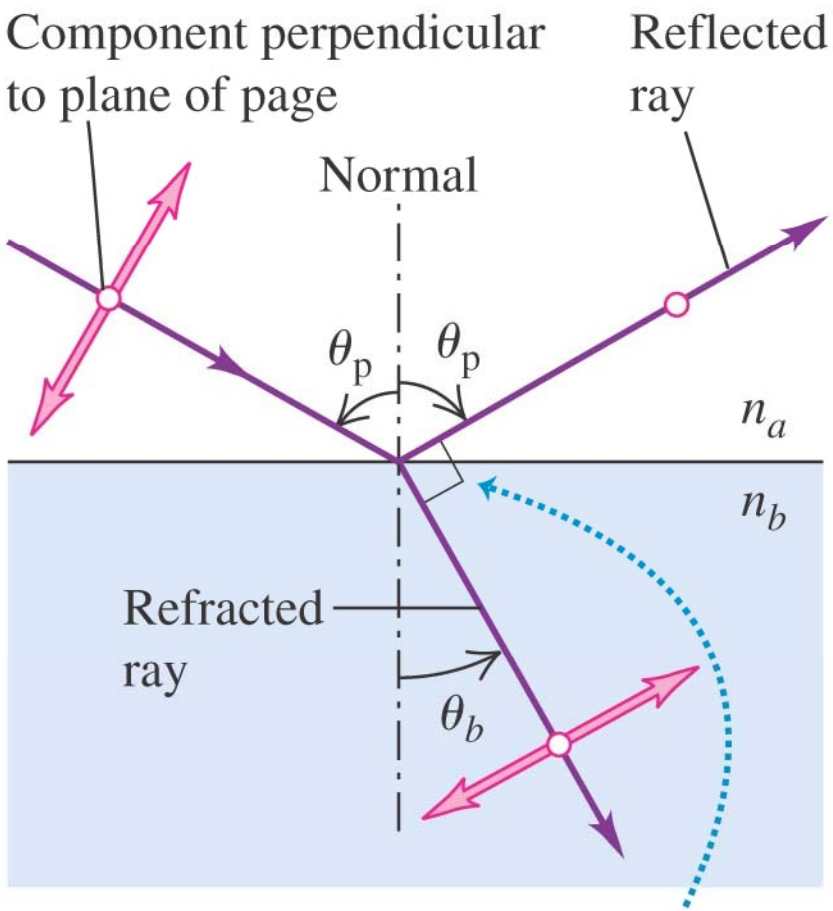
B. $I_0 / \sqrt{2}$.

C. $I_0 / 2$.

D. $I_0 / 4$.

E. $I_0 / 8$.

Note: This is a side view of the situation shown in Fig. 33.27.



When light strikes a surface at the polarizing angle, the reflected and refracted rays are perpendicular to each other and

$$\tan \theta_p = \frac{n_b}{n_a}$$