

4. The light travels from one medium to another, so it experiences refraction, and we use the law of refraction to calculate the angle of refraction.

$$n_1 \theta_1 \cong n_2 \theta_2$$

We divide both sides of the equation by n_2 to solve for θ_2 .

$$\theta_2 = (n_1 / n_2) \theta_1$$

$$\theta_2 = (1.00 / 1.60) (8^\circ)$$

$$\theta_2 = 5^\circ$$

Note that the angle that the light beam makes with the surface normal is smaller in the glass than it was in the air, indicating that the light beam is bent toward the normal in the material of higher index of refraction.