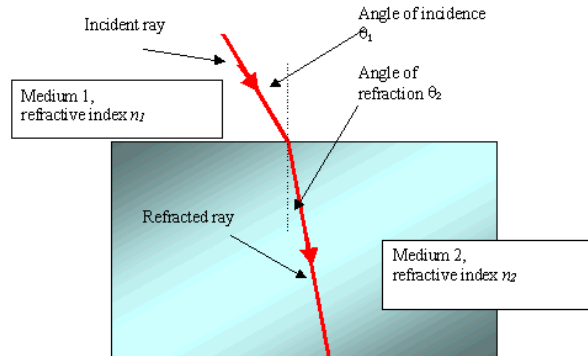


Answer on Question#40650 – Physics – Optics

An estimate of the refractive index of glass is 1.5. If the angle of incidence is 30° . The angle of refraction is

Solution:



$n_1 = 1$ – refractive index of air
 $n_2 = 1.5$ – refractive index of glass
 $\theta_1 = 30^\circ$ – angle of incidence
 θ_2 – angle of refraction

Snell's law of refraction:

$$n_1 \cdot \sin \theta_1 = n_2 \cdot \sin \theta_2$$
$$\sin \theta_2 = \frac{n_1 \cdot \sin \theta_1}{n_2} \Rightarrow \theta_2 = \arcsin\left(\frac{n_1 \cdot \sin \theta_1}{n_2}\right) = \arcsin\left(\frac{1 \cdot \sin 30^\circ}{1.5}\right) = 19.5^\circ$$

Answer: angle of refraction is equal to 19.5° .