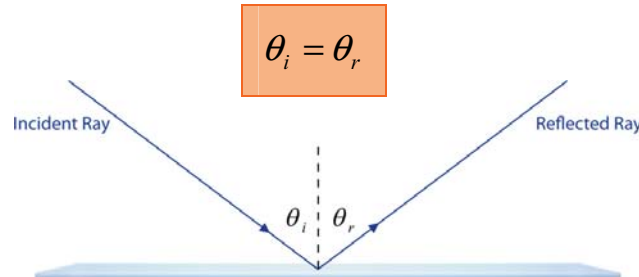


MAIN POINTS

Law of Reflection

The angle of incidence is equal to the angle of reflection.



Electromagnetic Fields in Matter

Replacing ϵ_0 and μ_0 by ϵ and μ , we determine the speed of light in matter.

$$v = \frac{c}{n}$$

Law of Refraction (Snell's Law)

The ratio of the sines of the angles of incidence and refraction is equal to the ratio of the indices of refraction.

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

Intensities and Polarizations

Light moving from a dense medium to a less dense medium will be totally internally reflected if the angle of incidence is greater than the critical angle.

$$\theta_c = \sin^{-1} \left(\frac{n_2}{n_1} \right)$$

Reflected light is generally partially polarized perpendicular to the plane of incidence and is totally polarized at Brewster's angle.

$$\theta_B = \tan^{-1} \left(\frac{n_2}{n_1} \right)$$