

Aim: Refraction


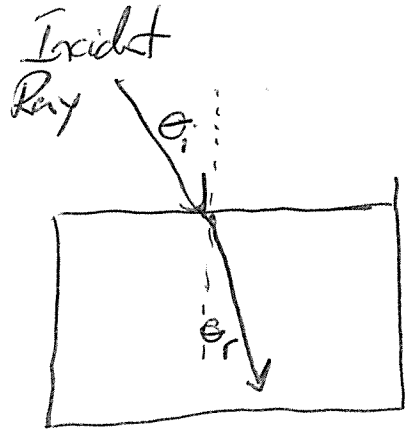
Go over $\&$ light travels at different speeds through different media.

Refraction - Change in Direction / bending of light as it travels between different media.

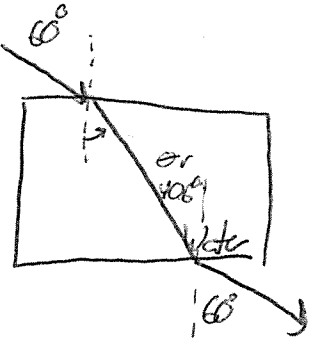
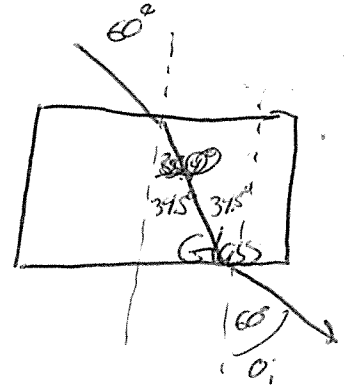
\uparrow Density \rightarrow \downarrow Speed

(\downarrow Angle of ~~Refraction~~ Refraction) bent toward the normal

Use
Becker
Ex-pt
Straw

Ex
index of refraction for glass is greater than water



- Rays of light & Snell's Law

index of Refraction

$$n = \frac{\sin \theta_i}{\sin \theta_r}$$

$$n_i \sin \theta_i = n_r \sin \theta_r$$

n = index of refraction

A ray of light travels through air is incident upon a sheet of crown glass at an angle of 30° . What is the angle of refraction

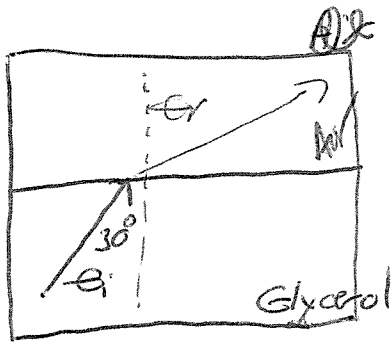
$$n_i \sin \theta = n_r \sin \theta_r$$

$$1 \sin 30 = 1.52 \sin \theta_r$$

$$\sin \theta_r = .328$$

$$\theta_r = 19.2^\circ$$

Draw Picture



$$n_r = 1$$

$$n_i = 1.47$$

$$n_i \sin \theta_i = n_r \sin \theta_r$$

$$1.47 \sin 30 = 1 \sin \theta$$

$$\theta = 47^\circ$$

Determine the speed of light in Glycerol

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

$$v = \frac{3 \times 10^8 \frac{\text{m}}{\text{s}}}{1.47} = 2.04 \times 10^8 \text{ m/s}$$

Worksheet Give

Pg 364-365: 1a, b, 3, 5, 6