

UNIT 7

Formula Sheet

frequency = $\frac{1}{\text{period}}$ \rightarrow $f = \frac{1}{T}$ Hz

period = $\frac{1}{\text{frequency}}$ \rightarrow $T = \frac{1}{f}$ seconds (s)

wave speed = wavelength \cdot frequency $v = \lambda f$ m/s

angle of incidence = angle of reflection $\theta_i = \theta_r$

Mirror & Lens Equation

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

d_o = distance of object

d_i = distance of image

f = focus length

Refractive Index (n)

$$c = 3.00 \times 10^8 \text{ m/s}$$

$n = \frac{\text{speed of light in a vacuum}}{\text{speed of light in a medium}}$

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

Snell's Law \rightarrow Two Mediums

$$n_1 \sin \theta_i = n_2 \sin \theta_r$$

n_1 = medium 1

n_2 = medium 2

Critical Angle

$$\sin \theta_{ic} = \frac{1}{n}$$

$$\sin^{-1}\left(\frac{1}{n}\right) = \theta_{ic}$$