

### 2.1 Waves

$$f = T^{-1} \quad \text{Frequency} = \text{Period Time of Wave}^{-1}$$

$$v = f\lambda \quad \text{Velocity} = \text{Frequency} \times \text{Wavelength}$$

#### Video Help

Everything about waves

### 2.2 Refraction

$$n = (\sin i) \div (\sin r) \quad \text{Refractive Index} = (\sin [\text{Incident Ray}]) \div (\sin [\text{Refracted Ray}])$$

$$n = (c_1) \div (c_2) \quad \text{Refractive Index} = (\text{Velocity Before Refraction}) \div (\text{Velocity After Refraction})$$

$$\sin c = n^{-1} \quad \sin (\text{Critical Angle}) = \text{Refractive Index}^{-1}$$

#### Video Help

Refraction and Snell's Law  
Total Internal Reflection

### Lenses

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v} \quad (\text{Focal Length})^{-1} = (\text{Object Distance})^{-1} + (\text{Image Distance})^{-1}$$

$$\frac{1}{f} = P \quad (\text{Focal Length})^{-1} = \text{Power of Lens}$$

$$m = (h_i) \div (h_o) \quad \text{Magnification} = (\text{Height of Image}) \div (\text{Height of Object})$$

$$m = (v) \div (u) \quad \text{Magnification} = (\text{Image Distance}) \div (\text{Object Distance})$$

#### Video Help

Diverging Lenses  
Converging Lenses  
Lens Equation  
Myopia and Hyper Metropia

### 2.4 Superposition, Interference and Diffraction

$$\lambda = (ay) \div d \quad \text{Wavelength} = \text{Slit Separation} \times \text{Fringe Separation} \div \text{Distance to Screen}$$

$$d \sin \theta = n\lambda \quad (\text{Slit Spacing}) \sin (\text{Angle From Centre}) = (\text{Order of Maxima}) \times \text{Wavelength}$$

#### Video Help

Standing Waves on String  
Standing Waves in Air Column  
Young's Double Slit Experiment  
Diffraction  
Single Slit Diffraction

