

# Chapter 9 – Quick Revision Sheet

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## Light- Reflection and Refraction

### Reflection of Light

**Definition:**

Reflection is the bouncing back of light from a surface.

**Key Points:**

- Angle of incidence = Angle of reflection
- Incident ray, reflected ray & normal lie in same plane

### Spherical Mirrors

**Types:** • Concave Mirror → converging    • Convex Mirror → diverging

**Important Terms**

- Pole (P) → centre of mirror
- Centre of Curvature (C) → centre of sphere
- Radius of Curvature (R) → PC
- Principal Axis → line joining P and C
- Focus (F) → point where rays meet/appear
- Focal Length (f) → distance PF

## Mirror Formula

Mirror formula gives the relationship between object distance (u), image distance (v) and focal length (f) of a spherical mirror.

**Formula:**  $1/v + 1/u = 1/f$

Where:

- u = object distance
- v = image distance
- f = focal length

## Refraction of Light

Refraction is the bending of light when it passes from one medium to another.

### Laws of Refraction

- Rays and normal lie in same plane
- Snell's Law:

$$\frac{\sin i}{\sin r} = \text{constant}$$

## Refractive Index

Refractive index is the measure of how much light bends when it passes from one medium to another.

**Formula:**  $n = c/v$

Where:

- c = speed of light in vacuum
- v = speed of light in medium

## Lens Formula

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

### Key Points:

- u = object distance
- v = image distance
- f = focal length

## Power of Lens

$$P = \frac{1}{f}$$

### Key Points:

- Unit = Diopetre (D)
- f in metres
- Convex lens → positive power
- Concave lens → negative power