RADIANT 2026

Physics

Light

Lecture - 02

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Topics *to be covered*

1. Formation of Image by Reflection
2. Real and Virtual Image
3. Image of a Point Object Formed By a Plane Mirror
4. Uses of Plane Mirror

Image Formed by Two Plane Mirrors

Recap *of previous lecture*

1. Light
2. Reflection of Light
3. Some Definition Related to Reflection
4. Types of Reflection


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① Speed of light (Klear)

A → 3×10^{-8} m/s

B → 3×10^{8} m/s

C → 3×10^{3} m/s

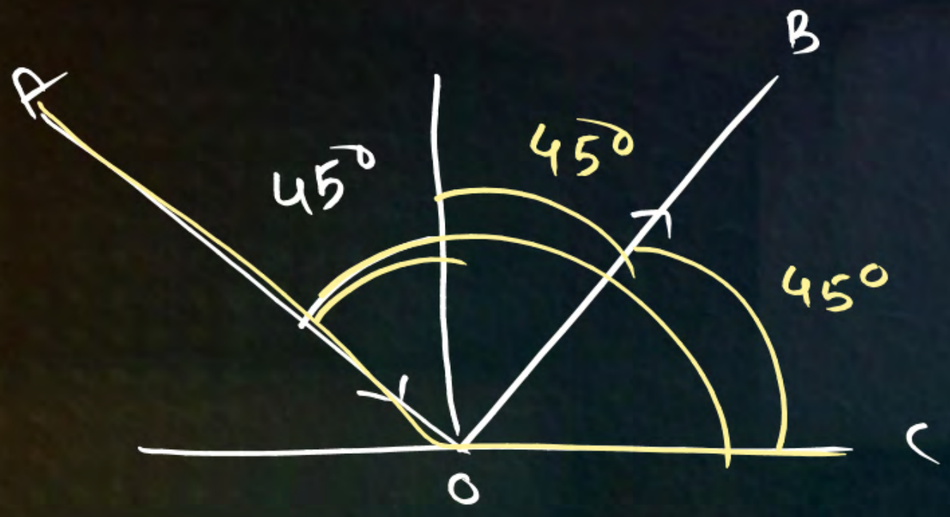
D → ∞

$x = 90 - 30$

$x = 60$

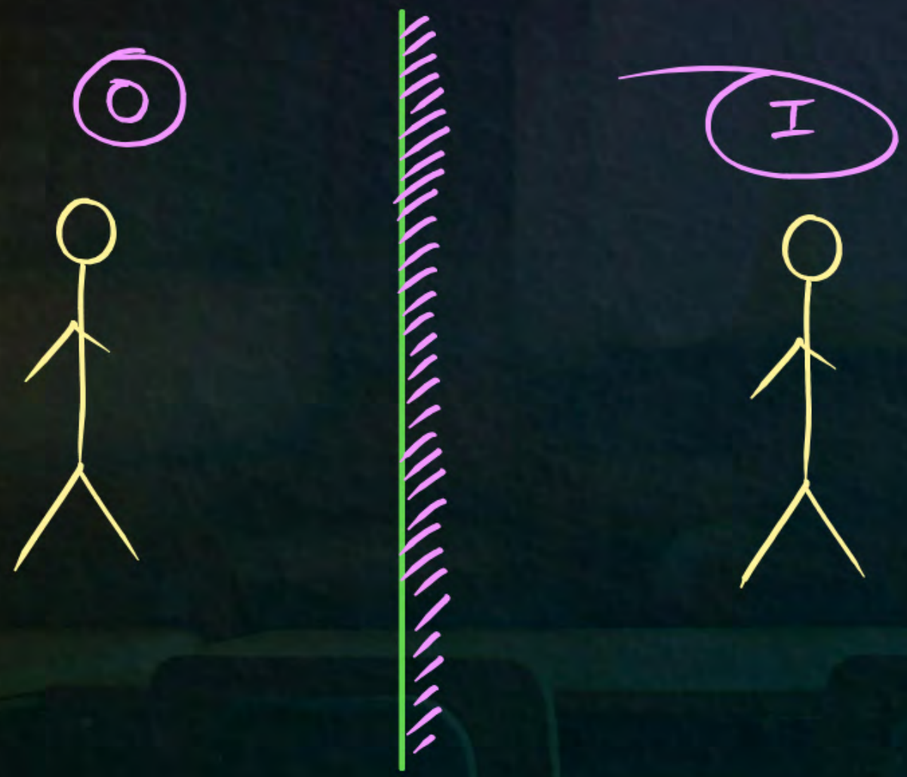
$y = 60$

$z = 30°$



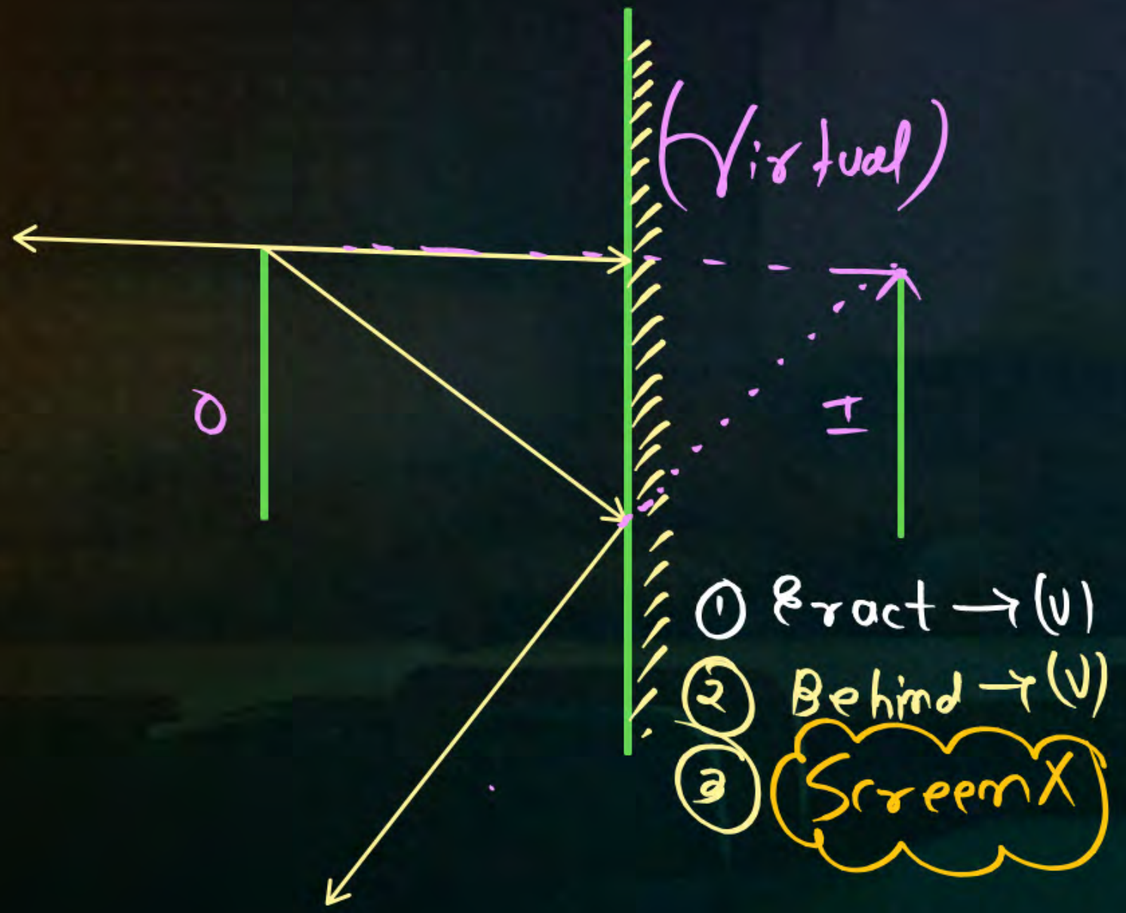
$\angle AOC$

135°

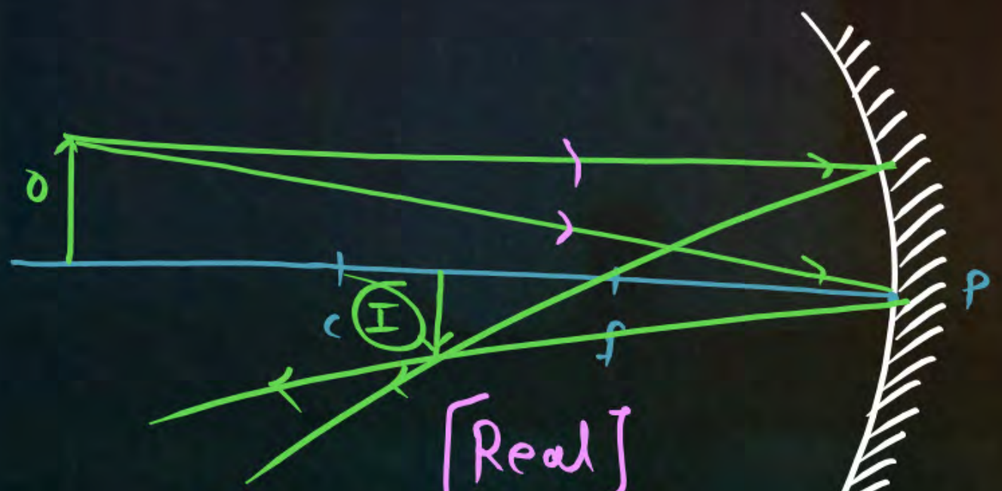


Min 2 light ray

[कार्तव्य]



① Erect → (V)
② Behind → (V)
③ Screen ✗



[Real]

① ±nverted → (R)
② In front → (R)
③ Screen ✓

Real and Virtual Image

Mirror → Plane → Reflecting Surface → plane

Mirror → Spherical → Concave
Spherical → Convex

1. Virtual
2. $O = I$
3. $D_O = D_I$
4. $m = +1$

Distinction Between a Real and Virtual Image

Concave → R/V

	Real image		Virtual image
1.	A real image is formed due to actual intersection of the reflected rays.	1.	A virtual image is formed when the reflected rays meet if they are produced backwards
2.	A real image can be obtained on a screen.	2.	A virtual image can not be obtained on a screen.
3.	A real image is inverted with respect to the object **Example:** The image of a distant object formed by a concave mirror.	3.	A virtual image is erect with respect to the object. **Example:** The image of an object formed by a plane mirror or by a convex mirror.

Image of Point Object Formed By a Plane Mirror

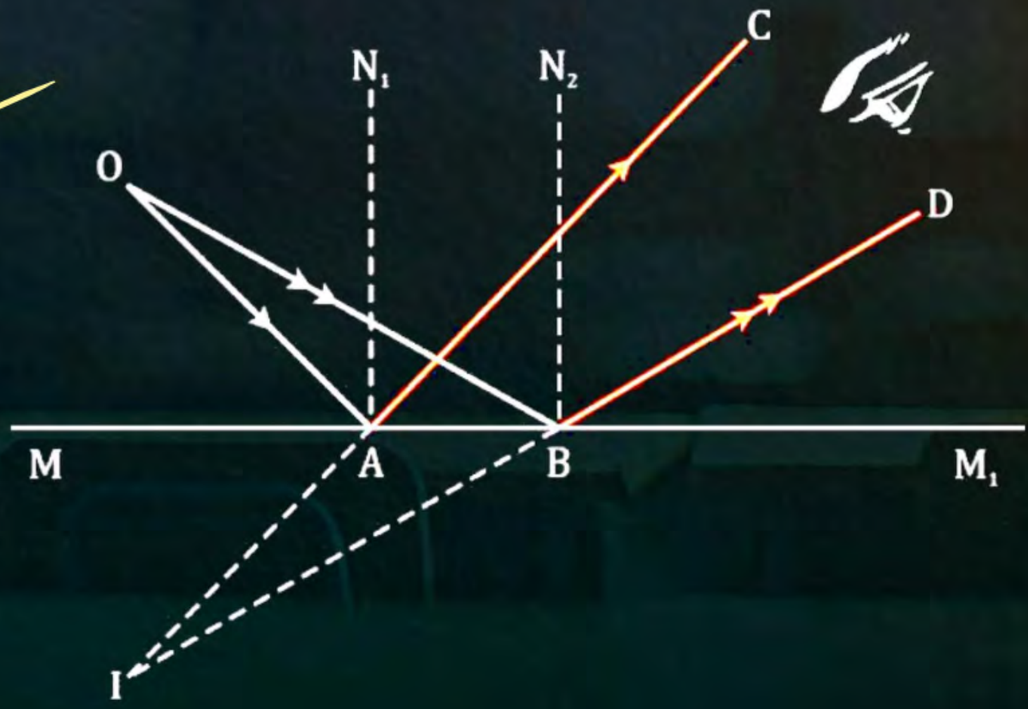
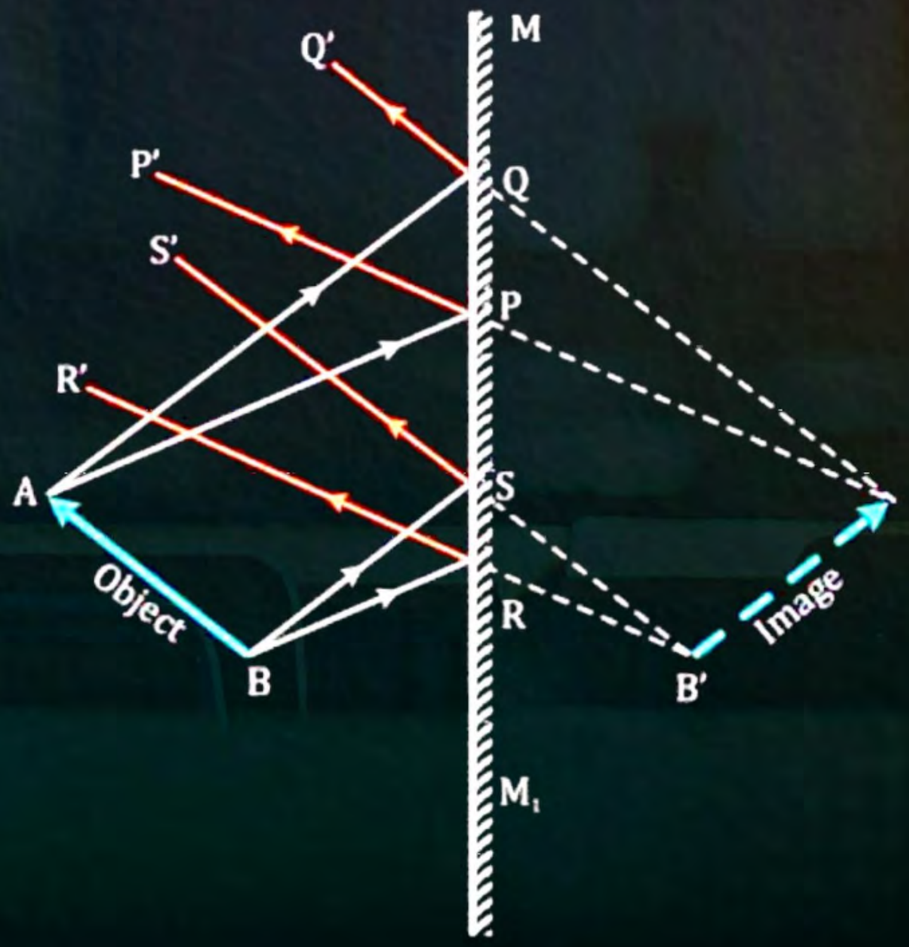


Image of An Extended Object Formed By a Plane Mirror



Lateral Inversion

The interchange of the left and right sides in the image of an object in a plane mirror is called lateral inversion.

Characteristics Of The Image Formed By A Plane Mirror

The image formed by a plane mirror has the following characteristics:

(i) upright (or erect),

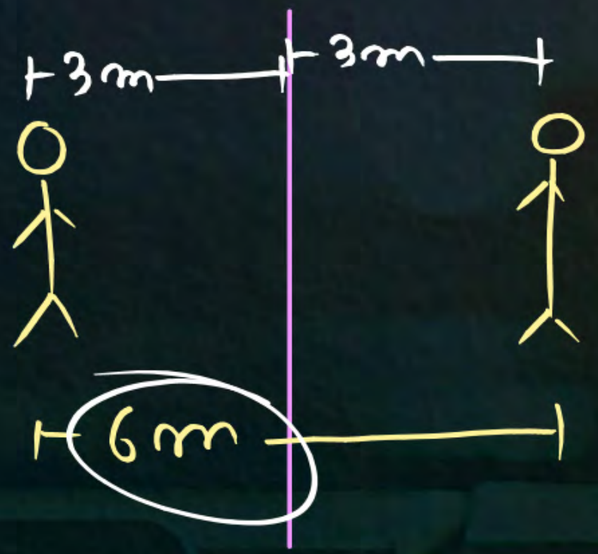
(ii) virtual,

(iii) of same size as the object, and

(iv) laterally inverted.

Question

A man standing in front of a plane mirror finds his image at a distance 6 metre from himself. What is the distance of man from the mirror?

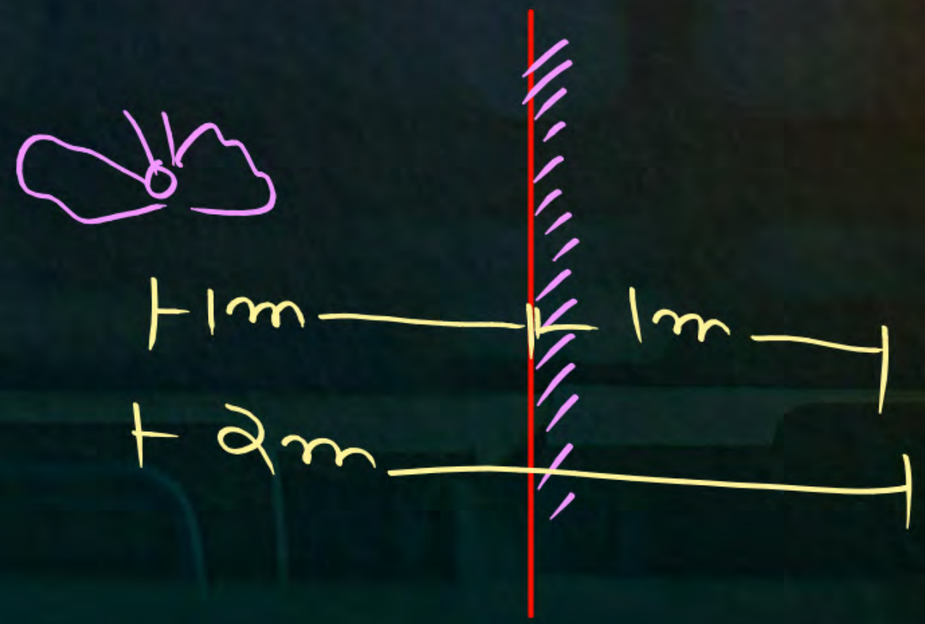


Question

An insect is sitting in front of a plane mirror at a distance 1 m from it.

(a) Where is the image of the insect formed?

(b) What is the distance between the insect and its image?



Question

A real image is:

A. Always upright and magnified

B. Formed only by a plane mirror

C. Formed when light rays actually meet at a point

D. Always formed by diverging lenses


Thank You