LIGHT REFLECTION AND REFRACTION

CHAPTER NO.10

SUB: PHYSICS

LIGHT REFLECTION AND REFRACTION

POINTS TO BE COVERED

- Sign conventions for reflection by spherical mirrors.
- Mirror Formula and Magnification.

LEARNING OUTCOMES

- Students will be able to

- Put proper signs before object distance and image distance.

- Solve numerical problems based on mirror formula and magnification.

- Predict the different positions of images for different positions of object.

RECALLING OF PREVIOUS KNOWLEDGE

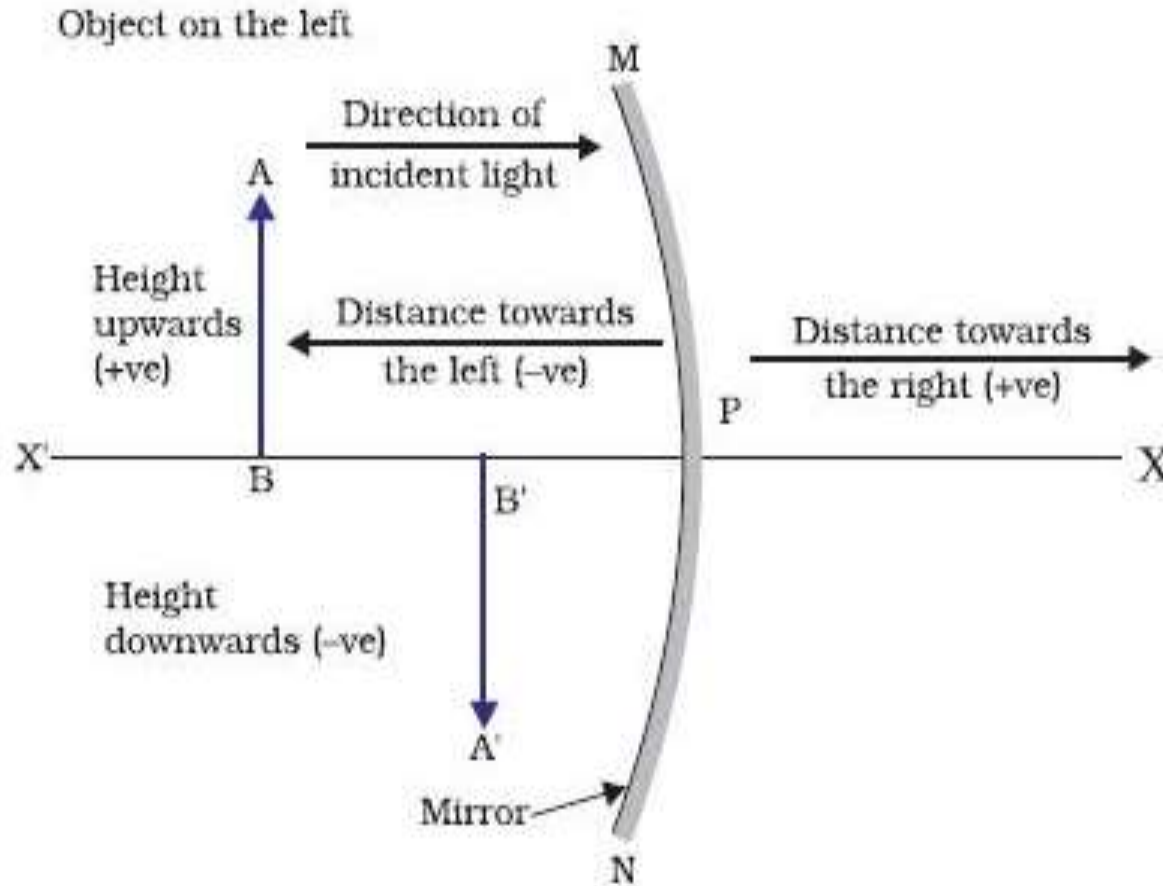1. What is the nature of image formed when the object is :

At c

Between F and C

At F

2. Why is a concave mirror used as rear view mirror in vehicles?

3. What are the uses of convex mirror?

Sign conventions for reflection by spherical mirrors.

Object on the left

Direction of incident light

A

Height upwards (+ve)

Distance towards the left (–ve)

Distance towards the right (+ve)

M

P

X'

B

B'

X

Height downwards (–ve)

A'

Mirror

N

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Video on sign convention on spherical mirror

- https://youtu.be/1Y4i0_xQUHA

MIRROR FORMULA AND MAGNIFICATION

- Relationship between f and R: R = f/2.
- $1/f = 1/u + 1/v$ (Mirror formula)
- $m = -v/u = H'/H$ (Magnification)

LETS SOLVE

1. A concave mirror produces three times magnified real image of object placed at 10cm in front of it. Where is the image located?

2. Find the focal length of a convex mirror whose radius of curvature is 32 cm.

3. The magnification produced by a spherical mirror is -3. List four information's obtained from this statement

HOME ASSIGNMENT

- An object 1cm high produces a real image 1.5 cm high when placed at a distance of 15 cm from a concave mirror. Calculate the position of the image and the magnification.

THANKING YOU
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