Reflection of Light

Numericals for Practice

1. An object is placed at a distance of 12cm in front of a concave mirror. It forms of a real image four times larger than the object. Calculate the distance of the image from the mirror?
2. A convex mirror used on a bus has a focal length of 200 cm. If a scooter is located at

100 cm from this mirror, find the position, nature and magnification of the image formed in the mirror?

1. An object 15 cm in length is placed at a distance of 10 cm in front of a convex mirror

 off 15 cm. find the position, nature and size of the image formed?

1. The radius of curvature of a convex mirror used in a moving automobile is 2 m. A

 truck is coming behind it a constant distance of 3.5 m. Calculate the position, size of

 the image relative to the size of the truck. What is the nature of the image?

1. A convex mirror, used on a moving automobile, has a radius of curvature of 3 m. If a

truck is following it at a constant distance of 4.5 m, find the position, nature and magnification of the image.

1. An object 3 cm high is placed at a distance of 9 cm in front of a concave mirror of focal

 length 18 cm. Find the position, nature and size of the image formed.

1. Find the position, nature and size of the image of an object 3 cm high placed at a

 distance 9 cm from a concave mirror or f= 18 cm.

1. State the mirror formula for determining focal length of spherical mirror. Write the

meaning of the symbols used. An object is placed at a distance of 25 cm from a concave mirror of f= 15 cm. Calculate the image distance.

1. There is a concave mirror of f= 20 cm. An object 5 cm high is placed at a distance of 30

 cm from the mirror. Calculate the position, size of the image formed.

1. The focal length of a concave mirror is 30 cm. An object 4 cm high is placed at a distance of 45 cm from the mirror. Calculate the position, and size of the image

 formed.

1. The focal length of a concave mirror is placed at a distance of 15 cm from the mirror.

 An object 3 cm high is placed at a distance of 20 cm from the mirror. Calculate the position and size of the image formed.

1. For an object placed at a distance of 20 cm from the pole of a mirror, an image is

 formed 40 cm further away from the object on the same side.

1. Find the mature of the mirror.
2. Is the image erect or virtual?
3. Draw a ray diagram to show the image formed.
4. Calculate the focal length of the mirror used.
5. An object of height 4 cm is placed at a distance 25 cm in front of a concave mirror of

focal length 15 cm. At what distance from the mirror a screen be placed in order to obtain a sharp image of the object? What is the nature & the size of the image?

(v=-37.5 , m=-1.5, h2 = -6 cm)

1. A concave mirror produces 3 times magnified real image of an object placed at 10 cm

 in front of it. Where is the image located? (v=-30 cm)

1. At what distance from a concave mirror of focal length 10 cm should be placed so

that its real image is formed 20 cm from the mirror? ( u = -20cm)

1. An object 3 cm high is placed at a distance of 8 cm from a concave mirror which

produces a virtual image 4.5 cm high.

1. What is the position of the image? ( m=1.5, v=12 cm)
2. What is the focal length of the mirror? (f=-24 cm)
3. A converging mirror forms a real image of height 4 cm of an object of height 1 cm

placed 20 cm away from the mirror.

1. Calculate the image distance ( m=-4, v=-80 cm)
2. What is the focal length ( -16 cm)
3. At what distance from a concave mirror of f= 10 cm should an object 2 cm long be

placed so as to get an erect image 6 cm tall? ( m = 3, v=-3u , u=-6.6 cm)

1. An object is placed 10 cm from a convex mirror of focal length 15 cm. Find the

position and nature of the image. (v=6 cm, m=0.6)

1. An object 5 cm in length is placed at a distance of 20 cm in front of a convex mirror

of r=30 cm. Find the position of the image, its nature and size? (v=8.6, h2 = 2.15)

1. An object placed 20 cm in front of a mirror is found to have an image 15 cm
2. in front of it (b) Behind the mirror

Find the focal length of the mirror and the kind of mirror in each case [-8.57,60]