

Chapter 10

REFLECTION AND REFRACTION

Example- 2:

A point source of light is located 20 cm in front of a convex mirror with $f = 15$ cm. Determine the position and character of the image point.

Solution:

$$\frac{1}{u} + \frac{1}{v} = \frac{1}{f} \quad \text{Here } u = -20 \text{ cm, } f = 15 \text{ cm}$$

$$\frac{1}{v} = \frac{1}{f} - \frac{1}{u} = \frac{1}{15 \text{ cm}} - \frac{1}{20 \text{ cm}} = \frac{35}{300 \text{ cm}} = \frac{7}{60 \text{ cm}}$$

$$v = 8.7 \text{ cm}$$

As 'v' is positive, the image is located behind the mirror.