

Answer on Question #52752-Physics-Optics

Where is the image located when an object is 60 cm from a convex mirror with a focal length of 20 cm?

- a. 15 cm behind
- b. 30 cm behind
- c. 60 cm behind
- d. 15 cm in front

Solution

Here $u = -ve$, $f = +ve$.

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

$$\frac{1}{-60} + \frac{1}{v} = \frac{1}{20} \rightarrow v = 15cm$$

The $+ve$ sign indicates that image is virtual and behind the mirror.

Answer: a. 15 cm behind.