

Answer on Question #75513-Physics-Optics

A concave lens of focal length 20 cm is placed at a distance of 20 cm from a 2 cm object which is placed perpendicularly to the principal axis. Find the size of the image formed.

Solution

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

$$\frac{1}{-20} = \frac{1}{v} - \frac{1}{-20}$$

$$\frac{1}{v} = \frac{-1}{10}$$

Image distance

$$v = -10 \text{ cm.}$$

Magnification,

$$M = \frac{v}{u} = \frac{-10}{-20} = 0.5$$

$$h = 0.5(2) = 1 \text{ cm.}$$

Answer: 1 cm.

Answer provided by <https://www.AssignmentExpert.com>