

a concave mirror produces a three times magnified real image of an object placed at 10cm in front of it. where is the image located?

**Solution:**

$m = 3$  – Magnification of the concave mirror;

$d = -10\text{cm}$  - object distance (since it is a concave mirror, object distance will be negative)

$f$  – image distance.

Formula for magnification:

$$m = \frac{A'B'}{AB} = \frac{-f}{d}$$

$$f = -m \cdot d = -3 \cdot (-10\text{cm}) = 30 \text{ cm}$$

**Answer:** image distance will be at 30cm at the back of the mirror, above the principle axis (because the value is positive).

