

### Answer on Question #41525 – Physics – Other

Which of the following is NOT true of experiments involving curved mirrors?

- a. image distance is negative for real image
- b. object distance is positive
- c. image distance is negative for virtual image
- d. focal length is negative for convex mirrors

#### **Solution:**

To find correct answer we should use the Gaussian mirror equation, also known as the mirror and lens equation, relates the object distance  $d_o$  and image distance  $d_i$  to the focal length  $f$ :

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

The sign convention used here is that the focal length is positive for concave mirrors and negative for convex ones, and  $d_o$  and  $d_i$  are positive when the object and image are in front of the mirror, respectively. Thus, they are positive when the object or image is real and negative in other cases.

Hence, image distance is positive for real image, the answer A is correct.

**Answer:** a. image distance is negative for real image.

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