PHYSICS IN MOTION
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Unit 6L
Spherical Mirrors
Practice Problems

Work each of the following problems. SHOW ALL WORK.

1. An object is 4.5 cm from a concave mirror, with its base on the principal axis. The focal point of the mirror is 2.0 cm.

   a. Use a ray diagram to show where the image is. Is the image real or virtual, inverted or right-side-up, larger or smaller than the object?

   b. Calculate the location of the image.

   c. Determine the magnification of the image.

2. An object is 4.0 cm from a concave mirror, with its base on the principal axis. The focal point of the mirror is 3.0 cm.

   a. Use a ray diagram to show where the image is. Is the image real or virtual, inverted or right-side-up, larger or smaller than the object?

   b. Calculate the distance to the image.

   c. Determine the magnification of the image.

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3. A virtual image is 5.0 cm from a concave mirror, with its base on the principal axis. The focal point of the mirror is 5.0 cm.

   a. Calculate the distance to the object.

   b. Determine the magnification of the image.

   c. Use a ray diagram to show where the image is. Is the image inverted or right-side-up, larger or smaller than the object?

4. An image produced by an object is virtual and 1.8 cm from a convex mirror. The focal point of the mirror is 3.0 cm.

   a. Calculate the distance to the object.

   b. Determine the magnification of the image.

   c. Use a ray diagram to show where the object is. Is the image inverted or right-side-up, larger or smaller than the object?

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5. An object is 1.5 cm from a convex mirror, with its base on the principal axis. The focal point of the mirror is 3.0 cm.

   a. Use a ray diagram to show where the image is. Is the image real or virtual, inverted or right-side-up, larger or smaller than the object?

   b. Calculate the location of the image.

   c. Determine how magnified the image is.