Unit 6N
Spherical Lenses
Practice Problems

Name:

Date:

Work each of the following problems. SHOW ALL WORK.

1. An object is 6.0 cm from a convex lens, with its base on the principal axis. The focal point of the lens is 3.0 cm.

   a. Use a ray diagram show the location of the image. 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 3.0 cm from a convex lens, with its base on the principal axis. The focal point of the lens is 3.0 cm.

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

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

   b. Calculate the location of the image.

   _____

   c. Determine the magnification of the image.

   _____

3. An object is 4.5 cm from a concave lens, with its base on the principal axis. The focal point of the lens is 3.0 cm.

   a. Use a ray diagram show the location of the image. 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.

PHYSICS

*IN*MOTION »»»

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Work each of the following problems. SHOW ALL WORK.

4. A real image is 5.0 cm from a convex lens, with its base on the principal axis. The focal point of the lens is 3.0 cm.

   a. Calculate the location of the object.

   b. Determine the magnification of the image.

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

   _____

5. An object is 4.0 cm from a convex lens, with its base on the principal axis. The focal point of the lens is 3.0 cm. The object height is 2.5 cm.

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

   _____

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Work each of the following problems. SHOW ALL WORK.

5. An object is 4.0 cm from a convex lens, with its base on the principal axis. The focal point of the lens is 3.0 cm. The object height is 2.5 cm.

   b. Calculate the location of the image.

   c. Determine the magnification of the image.

   d. What is the height of the image?