# Lens Practice

Read from **Lesson 5** of the **Refraction and Lenses chapter** at **The Physics Classroom:**

**http://www.physicsclassroom.com/Class/refrn/u14l5f.html**

Use the lens equation and magnification equation to solve the following problems.

1. Determine the image distance and image height for a 4.0-cm tall object placed 54.0-cm from a converging lens having a focal length of 18.0 cm.

2. Determine the image distance and image height for a 4.0-cm tall object placed 36.0-cm from a converging lens having a focal length of 18.0 cm.

3. Determine the image distance and image height for a 4.0-cm tall object placed 24.0-cm from a converging lens having a focal length of 18.0 cm.

4. Determine the image distance and image height for a 4.0-cm tall object placed 12.0-cm from a converging having a focal length of 18.0 cm.

5. A magnified, inverted image is located a distance of 32.0 cm from a converging lens with a focal length of 12.0 cm. Determine the object distance and tell whether the image is real or virtual.

6. **ZINGER:** An inverted image is magnified by 2 when the object is placed 22 cm in front of a converging lens. Determine the image distance and the focal length of the lens.

7. A diverging lens has a focal length of -12.8 cm. An object is placed 34.5 cm from the lens's surface. Determine the image distance.

8. Determine the focal length of a diverging lens that produces an image that is 12.9 cm from the lens (and on the object's side) when the object is 32.4 cm from the lens.

9. A 2.85-cm diameter coin is placed a distance of 31.4 cm from a diverging lens that has a focal length of -11.6 cm. Determine the image distance and the diameter of the image.

10. The focal point is located 20.0 cm from a diverging lens. An object is placed 12.0 cm from the lens. Determine the image distance.

 