Converging Mirror Assignment

Answer each question on a separate page. Draw a ray diagram first and use it to find the answer.

Use the magnification equation ($M = h_i/h_o$ or $M = -d_i/d_o$) or the mirror equation ($1/f = 1/d_i + 1/d_o$)

1. An object 1.0 cm high is 12 cm from a converging mirror. The focal length is 4.0 cm and the center of curvature is 8.0 cm.
    a) Find the image distance (from the mirror)
    b) Find the height of the image
    c) List the characteristics of the image.

2. An object 1.5 cm high is located 7.0 cm in front of a converging mirror that has a focal length of 5 cm.

    a) Find the image distance
    b) Find the image height
    c) List the characteristics of the image

3. An object 3.0 mm high is 10.0 cm in front of a concave mirror having a 6.0 cm focal length.
    a) Find the image distance using the mirror equation.
    b) Find the magnification of the mirror.
    c) Find the height of the image mathematically.

4. An object 8.0 cm high object is placed 30.0 cm in front of a converging mirror with a focal length of 20.0 cm.
    a) Find the image distance using the mirror equation.
    b) Find the magnification of the mirror.
    c) Find the height of the image mathematically.

5. A 2.5 cm object is located 24.0 cm from a converging mirror with a focal length of 14.0 cm. Calculate the **image position and size**.

6. The image of an object is 30.0 cm from a concave mirror with a 20.0 cm radius of curvature. Calculate the **object position**.

7. A mirror with a focal length of 12.0 cm forms a real image -15.0 cm tall 30.0 cm from the mirror. Calculate the **object** position and size.

8. A 7.00 cm object located 20.0 cm from a mirror forms an image 80.0 cm from the mirror. Calculate the **focal length** and the **image size**.