PracTest MirrorLens ID#

1. A diverging mirror has what shape?
   A. concave B. convex C. could be either

2. A concave mirror always has a(n) _?_ focal length.
   A. positive B. negative C. zero D. infinite

3. A convex mirror can produce
   A. real images only B. virtual images only C. real and virtual images

4. A diverging mirror can produce _?_ images.
   A. only upright (erect) B. only inverted C. upright or inverted

5. A concave mirror can produce _?_ images.
   A. only enlarged B. only reduced C. enlarged or reduced

Consider the following optical system. An object with a height h_o is placed a distance *o* in front of a lens whose focal length is *f*. If an image forms, it does so at a distance *i* from the lens and has a height h_i.

Possible image characteristics for the question(s) below:
I. Virtual II. Enlarged III. Inverted

6. If $f < 0$ and $f < o < 2f$, the resulting image is
   A. I only B. III only C. I and II only
   D. I and III only E. II and III only F. I, II, and III

7. For an optical system involving a converging mirror, the principal ray that is incident through the center point reflects
   A. parallel to the axis B. through the focal point
   C. through the center point D. at an equal angle from the axis

8. Consider a lens whose focal length is +30cm. If an object is placed 40cm from the lens, where will its image appear? Write the image distance in cm in the answer blank (don't forget sign).

9. Consider a lens whose focal length is –20cm. If a 10cm object is placed 20cm from the lens, how tall will its image be? Write the image height in cm in the answer blank (don't forget sign).

10. If the magnification factor of an optical system is –4, the image is
    A. upright and enlarged B. upright and reduced C. inverted and enlarged
    D. inverted and reduced E. None of these

11. Which of these characterizes the magnification factor of any optical system that produces a virtual image?
    A. $m > 0$ B. $m < 0$ C. $|m| > 1$
    D. $|m| < 1$ E. None of these