

Chap 36: Geometric optics (continued)

Example 1: How far behind a plane mirror does the image appear to be?

Example 2: Find the image location, image type and the magnification for a concave mirror with $f = 50$ cm and $o = 75$ cm.

Example 3: Find the image location, image type and the magnification for a concave mirror with $f = 50$ cm and $o = 25$ cm.

Example 4: Find the image location, image type and the magnification for a convex mirror with $f = -30$ cm and $o = 40$ cm.

Example 5: Find the image location, image type and the magnification for a convex mirror with $f = -30$ cm and $o = 20$ cm.

Example 6: If a real image is 4 times bigger than the object and the object located 50 cm in front of the mirror, what is the radius of curvature for the mirror?

Example 7: The water in Trafalgar Fountain appears to be 18 in deep. What is the actual depth of the water?

Example 8: A smooth block of ice ($n = 1.31$) rests on the floor. If the block is 40 cm thick, how far below the top surface does the bottom surface appear to be?

Example 9: A convex lens has an 18 cm curve on the left side and a 24 cm curve on the right side, if $n = 1.5$, what is the focal length of the lens?

Example 10: Find the image location, image type and the magnification for a convex lens with $f = 50$ cm and $o = 75$ cm.

Example 11: Find the image location, image type and the magnification for a concave lens with $f = -50$ cm and $o = 75$ cm.

Example 12: Two convex lenses are 30 cm apart. The lens on the left has a 25 cm focal length, and the one on the right has $f = 40$ cm. Find the final image location, image type and the magnification if the object is 50 cm to the left of the left-hand lens.

Example 13: A convex and a concave lens are 50 cm apart. The convex lens is on the left and has a 40 cm focal length, and the concave one on the right has $f = -60$ cm. Find the final image location, image type and the magnification if the object is 100 cm to the left of the left-hand lens.