

1. A boy stands 1.5 m from the convex lens of a camera. If the focal length of the camera is 25 cm, then where is the image formed?
2. A jeweler uses a convex lens of focal length 2 cm to form an image of a watch gear that is 1.85 cm from the lens. How far from the lens is the image?
3. What is the focal length of a convex lens if an object 2.4 m from the lens forms an image 80 cm from the lens.
4. The convex lens of a projection lantern has a focal length of 45 cm. How far from the lens should a slide be placed to get a clear image on a screen 7.2 m away?
5. Find the position, nature, and relative size of an object that is located 30 cm from a concave lens with a -15 cm focal length.
6. An object is placed at the center of curvature of a concave mirror with a radius of 50 cm. Where will the image be formed?
7. A concave mirror has a focal length of 60 cm. An object is placed at a point 80 cm in front of the mirror. Where will the image be formed?
8. An object 8 cm in front of a concave mirror forms a virtual image 12 cm behind the mirror. What is the focal length of the mirror?
9. An object is held 16 cm from a concave mirror with a 48 cm focal length. Where will its image appear to be?
10. A convex rearview mirror on a truck has a focal length of 60 cm. If a car is 8 m from the mirror, where will the image appear to be?
11. An object is placed 30 cm to the left of a convex lens of 30 cm focal length, and a convex lens of 8 cm focal length is placed 25 cm to the right of the first lens. How far is the final image from the object?
12. Two lenses, one convex with 15 cm focal length and the other concave with 12 cm focal length, are 26 cm apart. Where is the final image of an object 60 cm from the convex lens?
13. A lens of power +20 diopters is used to form a real image of a postage stamp on a photographic film that is 6 cm from the lens. How far from the lens is the stamp? Note: Power in a diopter = $1/\text{focal length in meters}$