

Exam in a Can Mirrors & Lenses

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Physics Skills
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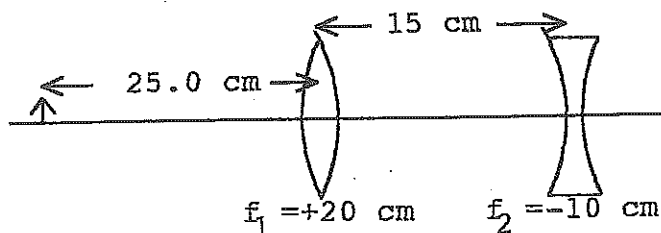
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Form A-A

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Show all work - Use extra sheets if necessary

1. A candle is 6.0 cm from the convex lens with focal length 4.0 cm. What is the distance from the lens to the image of the candle? Is the image reduced or enlarged?
2. A convex lens with focal length 20 cm is placed 30 cm to the right of a 2-mm tall fruit fly. a) Calculate the location and height of the image. b) Determine if the image is real or virtual and erect or inverted.
3. You are looking in a concave mirror at a candle that is 20.0 cm high. The mirror has a focal length of 13.8 cm. The candle is 50.0 cm from the mirror.
 - a) How far from the mirror is the image?
 - b) How high is the image?
4. A convex spherical mirror has a radius of curvature of 44 cm. An object with height 7.3 mm is placed on the axis of the mirror 57 cm from the mirror.
 - a) Find the location of the image.
 - b) Find the height of the image.
5. The dual lens system shown consists of a converging lens with focal length 20.0 cm and 15.0 cm to its right, a diverging lens with focal length 10.0 cm. (a) Find the final location of the image (with respect to the second lens) if a 2.00 mm tall object is placed 25.0 cm to the left of the converging lens. (b) Is the image real or virtual?



6. An object placed 180 cm from a diverging lens produces an image 90 cm from the lens. A converging lens with the same focal length (but different sign) replaces the diverging lens. Where is the image now?
7. A concave mirror has a focal length of 4.9 cm. What is the radius of curvature?