

Week 29 - Optics

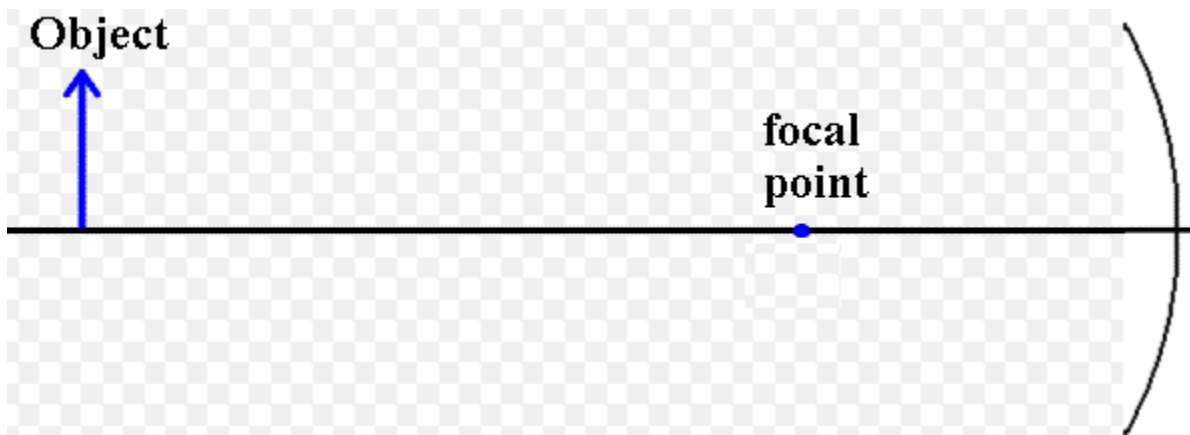
Read Pages 321-326 – Mirrors

TQ1. What is a virtual image?

TQ2. What is the equation for magnification, m ?

TQ3. What is a real image?

CQ4. Sketch the light rays as shown on page 323 for the concave mirror. Is the image bigger or smaller? Is the image upright (right side up) or inverted (upside down)? Is the image real or virtual?



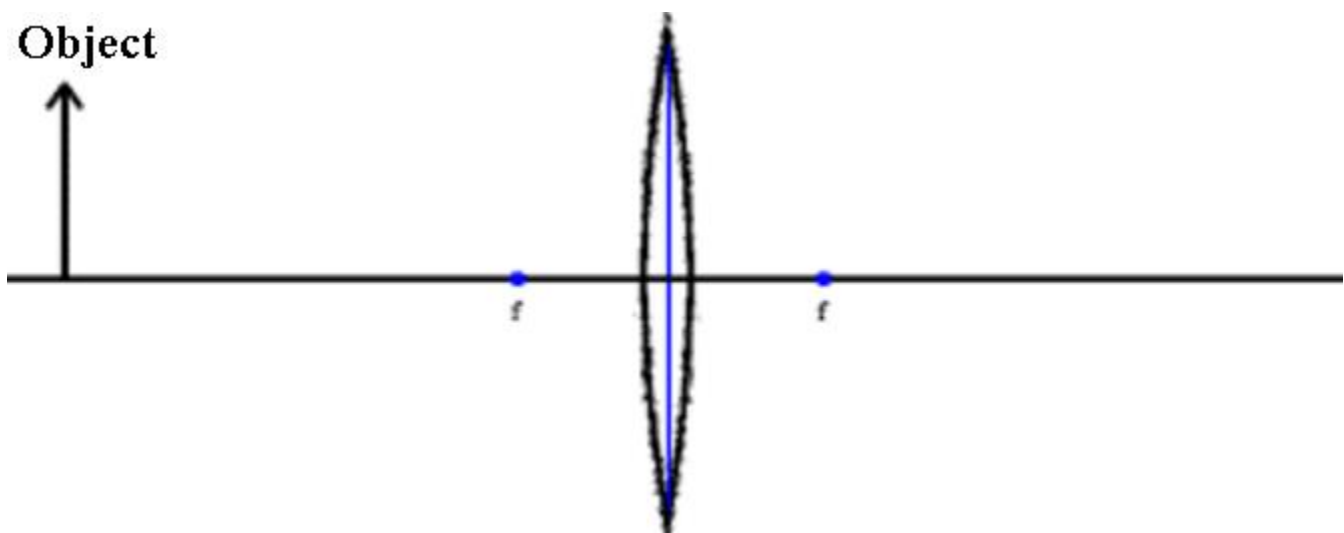
TQ5. What is the equation for the focal point using distance of the object and distance of the image?

QQ6. A candle is placed 6.0 m in front of a converging mirror that has a focal length of 2.0 m. What is the distance of the image? What is the magnification of this image?

TQ7. What kind of images will a convex mirror show – real or virtual? Bigger or smaller? Upright or inverted?

Read Pages 332-336 – Thin Lenses

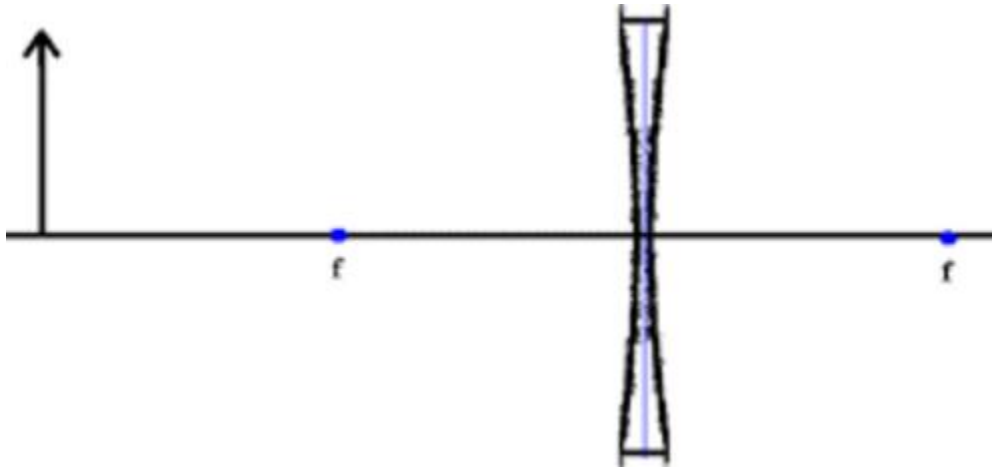
CQ8. Sketch the light rays as shown on page 332 for the convex lens. Is the image bigger or smaller? Is the image upright (right side up) or inverted (upside down)? Is the image real or virtual?



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QQ9. A light source is placed 0.40 m in front of a convex lens that has a focal length of 0.20 m. What is the distance of the image? What is the magnification of this image?

CQ10. Sketch the light rays as shown on page 334 for the concave lens. Is the image bigger or smaller? Is the image upright (right side up) or inverted (upside down)? Is the image real or virtual?

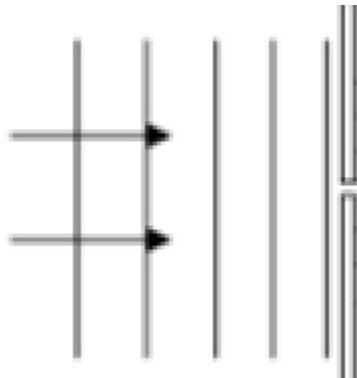


Read Pages 337-339 – Diffraction

TQ11. What is diffraction?

TQ12. What famous experiment proved light has properties of waves?

CQ13. The diagram below shows a plane wave passing through a small opening in a barrier. Sketch four wave fronts after they have passed through the barrier that demonstrates diffraction.



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CQ14. On the diagram below, sketch what you would see on the detector screen that shows the constructive and destructive interference phenomena that occurs in the famous experiment in TQ43.

