

Homework: Ch. 26

1. Calculate the power of the eye when viewing an object 50.0 cm away and an object 3.00 m away.
2. A young woman with normal distant vision has a 10.0% ability to accommodate the power of her eyes. What is the closest object she can see clearly?
3. A student's eyes, while reading the blackboard, have a power of 51.0 m^{-1} . How far is the board from his eyes?
4. What magnification is produced by a 0.150 cm focal length microscope objective that is 0.155 cm from the object being viewed?
5. A nearsighted man cannot see objects clearly beyond 20 cm from his eyes. How close must he stand to a mirror in order to see what he is doing when he shaves?
6. Where does an object need to be placed relative to a microscope for its 0.500 cm focal length objective to produce a magnification of -400 ?
7. An amoeba is 0.305 cm away from the 0.300 cm focal length objective lens of a microscope. Where is the image formed by the objective lens and what is this image's magnification?
8. A $7.5\times$ binocular produces an angular magnification of -7.50 , acting like a telescope. (Mirrors are used to make the image upright.) If the binoculars have objective lenses with a 75.0 cm focal length, what is the focal length of the eyepiece lenses?
9. A large reflecting telescope has an objective mirror with a 10.0 m radius of curvature. What angular magnification does it produce when a 3.00 m focal length eyepiece is used?
10. People who do very detailed work close up, such as jewellers, often can see objects clearly at much closer distance than the normal 25 cm.
 - a. What is the power of the eyes of a woman who can see an object clearly at a distance of only 8.00 cm?
 - b. What is the size of an image of a 1.00 mm object, such as lettering inside a ring, held at this distance?