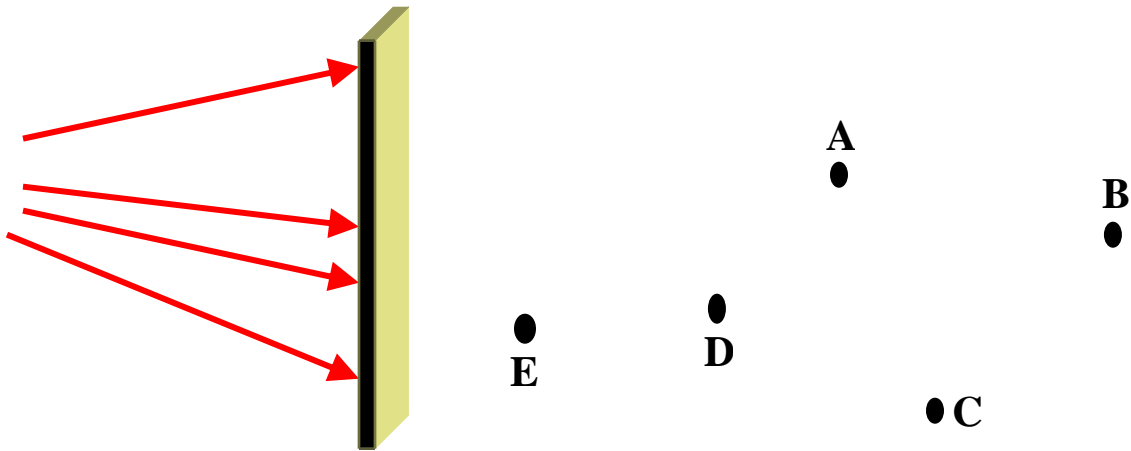
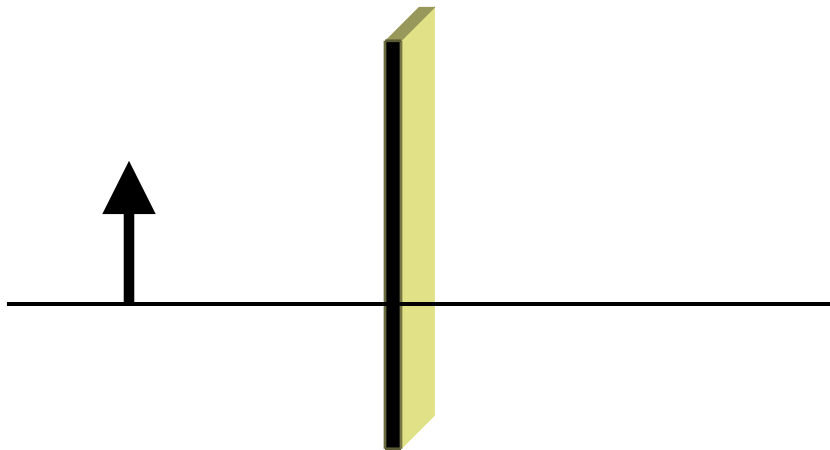


1. The image of an object as formed by a plane mirror is located _____ the mirror surface.
2. The diagram below depicts the path of four incident rays emerging from an object and approaching a mirror. Five lettered locations are shown on the opposite side of the mirror. Which location is representative of the image location? Draw at least three rays to support your answer.



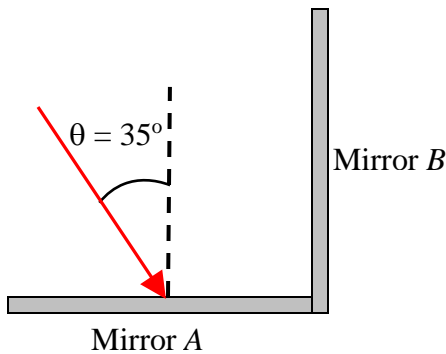
3. For the plane mirror below using at least two rays draw the image of the arrow created by the mirror in the correct location. The distance from the arrow to the mirror is 1.3 meters. What is the distance from the mirror to the image?



4. Suppose you are holding a flat mirror and standing at the center of a giant clock face built into the floor. Someone standing at 12 o'clock shines a beam of light toward you, and you want to use the mirror to reflect the beam toward an observer standing at 5 o'clock. What should the angle of incidence be to achieve this? What should the angle of reflection be?

5. If you are standing two meters in front of a flat mirror, how far behind the mirror is your image? What is the magnification of the image? Where is the image's right side with respect to your right side?

6. If you walk 1.2 m/s toward a flat mirror, how fast does your image move? In what direction does your image move with respect to you?



7. Two flat mirrors make an angle of 90° with each other as shown. An incoming ray makes an angle of 35° with the normal of mirror *A*. Use the law of reflection to determine the angle of reflection from mirror *B*. What is unusual for the incoming and reflected rays of light for this arrangement of mirrors?

8. If a light ray strikes a flat mirror at an angle of 29° from the normal, the reflected ray will be _____ $^\circ$ from the normal.