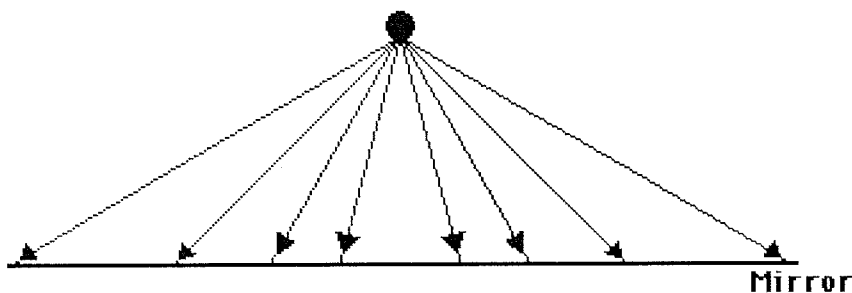


**Image Formation and Characteristics**

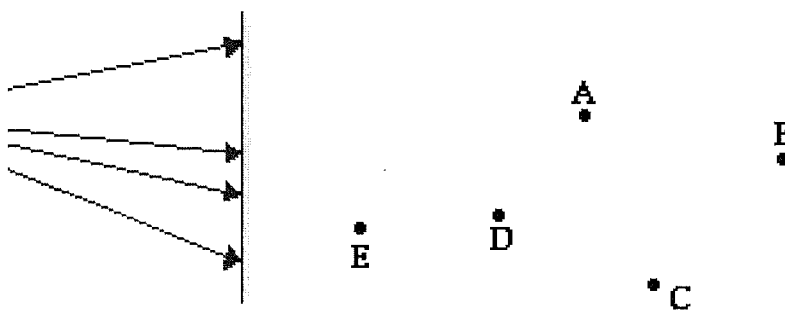
1. An object (denoted by a dark circle) is placed in front of a plane mirror as shown below. Light from the object emanates in a variety of directions. For each light ray incident to the mirror, accurately draw the corresponding reflected ray. Use a protractor, straightedge, and the law of reflection.



2. For each reflected ray drawn in the diagram above, use dashed lines to trace the reflected ray backwards behind the mirror. If done correctly, all reflected rays should intersect at the same location; this location corresponds to the image location.
3. Make measurements on the diagram to compare the object distance (distance from the object to the mirror) to the image distance (distance from the intersection point or image location to the mirror). Record the results of your comparison in the space below.

## Light, Reflection and Mirrors

4. The image of an object as formed by a plane mirror is located \_\_\_\_.
- on the mirror surface
  - in front of the mirror surface
  - behind the mirror surface
  - any of the above, depending on the object's location.
5. Which of the following statements are true of plane mirror images? List all that apply.
- The location of an image is different for different observers.
  - Observers at different locations will sight along different lines at the same image.
  - Every image is located on the mirror surface and at the same location for different observers.
  - Every image is located on the mirror surface, but at a different location for different observers.
  - All observers (regardless of their location) will sight at the same image location.
6. 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?



7. The diagram below depicts the path of four reflected rays that originated at the object on the left side of the mirror and have subsequently reflected from the mirror. Five lettered locations are shown on the right side of the mirror. Which location is representative of the image location?

