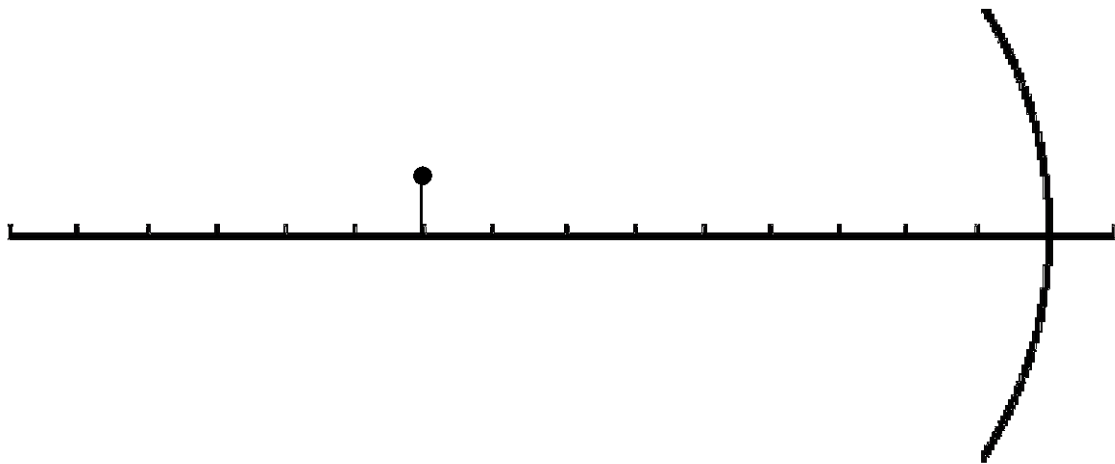


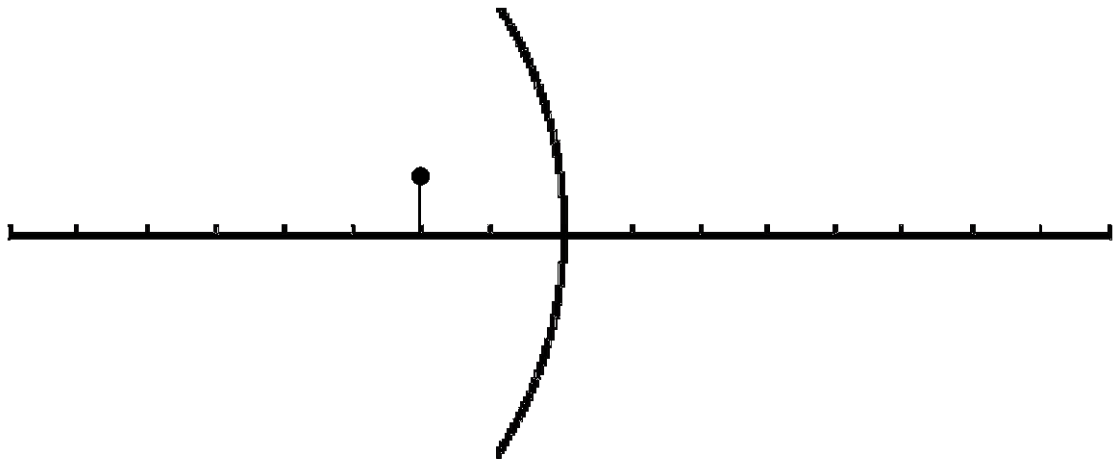
AP 2 Optics: Curved mirror problems WS 2

Start each problem with a ray diagram to get a qualitative answer. Then use the curved mirror equation or similar triangles within your ray diagram to find quantitative answers.

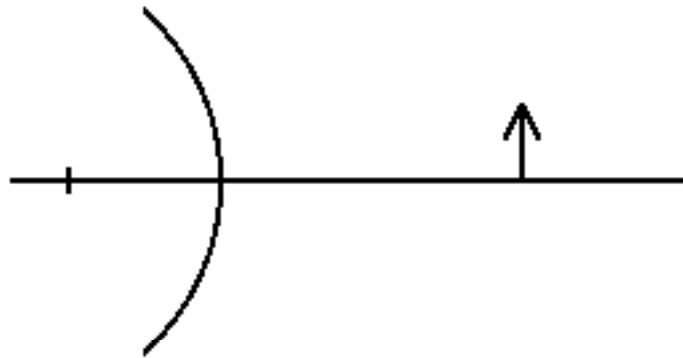
1. If you place a 4.0 cm high luminous object 45 cm in front of a concave mirror with a focal length of 15 cm, determine
 - a. where must you place a screen so as to have a clear image of the object that others can see without looking in the mirror.
 - b. the orientation of the image (upright or inverted).
 - c. the height of the image.



2. If you place a 4.0 cm high luminous object 2.0 cm in front of a concave mirror that has a focal point of 5.0 cm, determine
 - a. if you can place a screen in any position to form an image on the screen. If so, where is that position? If not, why not?
 - b. the image position of the object.
 - c. the orientation of the image (upright or inverted).



3. If you place an object 20 cm in front of a convex mirror with a focal length of -10 cm, determine
- the image position of the object.
 - if you can place the image on a screen so that it can be seen without looking in the mirror. Explain your answer.
 - the image size of the object and its orientation (upright or inverted).



4. An object is placed in front of half of a concave mirror.
- Make a ray diagram. Will an image form at the position indicated? Why or why not?

b. When the object is 20 cm from the mirror, the image is half the height of the object. Use similar triangles to determine the focal length of the mirror.

