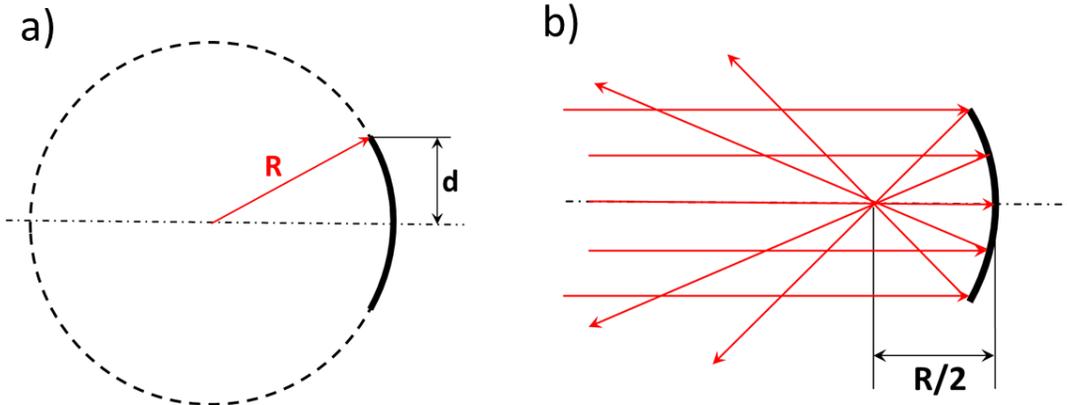


Homework 28.

**Concave mirror images.**

We discussed properties of spherical mirrors. We found that as long as the radius of curvature of a spherical mirror is much less than the mirror radius  $d$  (see the Figure 1a below) the spherical mirror can focus the parallel beam to the point which is located at a distance  $R/2$  from the mirror (Figure 1b).



Problems:

1. Please try to find the position of the point light source image, formed by a concave spherical mirror with radius of curvature  $R$ , in each case shown in the figure below. The only fact we can use is that the angle of incidence is equal to the angle of reflection. You can use a ruler, compass etc...
2. Try to prove that the rays parallel to the dashed line (optical axes) after reflection cross the dashed line at a distance  $R/2$  from the mirror.

