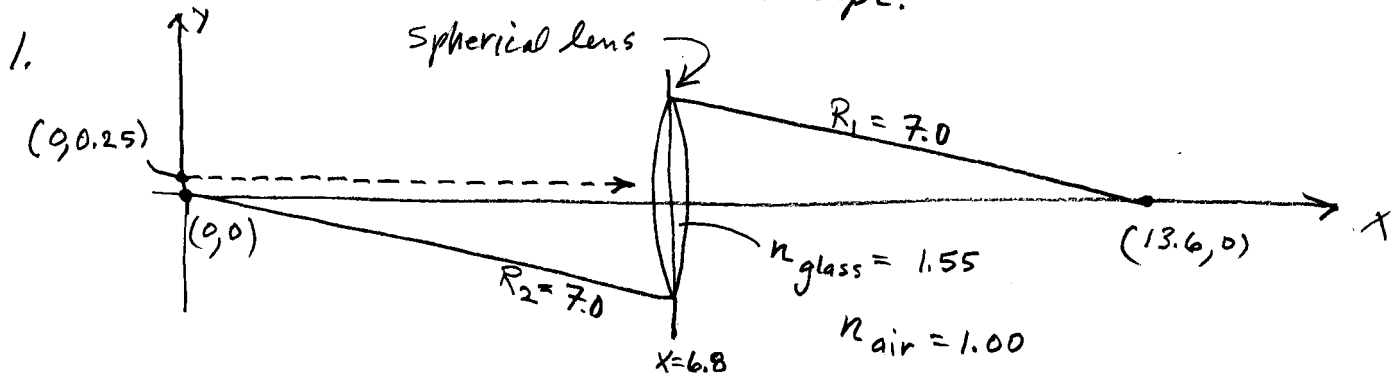
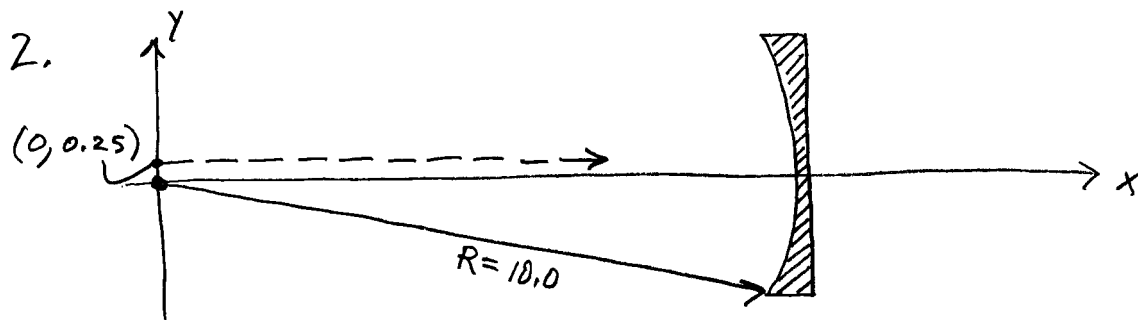


# Digital Photogrammetric Systems Fall 2008 CE 597 (019)

Homework 1 assigned Wed. 10 Sept,  
due Wed 17 Sept.



Trace the given ray through the lens and find its intersection with the optical axis ( $x$ -axis). The ray entering from left is parallel to the  $x$ -axis. Compare the determined focal length with that obtained by the (thin lens) lens makers equation.



Trace the given ray, entering from the left, and find the intersection with the optical axis ( $x$ -axis) after reflection from the spherical mirror shown. How does this compare to the nominal focal length of a spherical mirror of  $R/2$ ?

(Note: for 1 & 2 use rigorous ray trace approach)

3. For a telescope with focal length  $f = 13 \text{ m}$ , and an aperture diameter of  $1 \text{ m}$ ,

(a) what is the  $f/\#$ ?

(b) for green light ( $\lambda = 550 \text{ nm}$ ) what is the resolvable displacement in the focal plane, by the Rayleigh criterion?