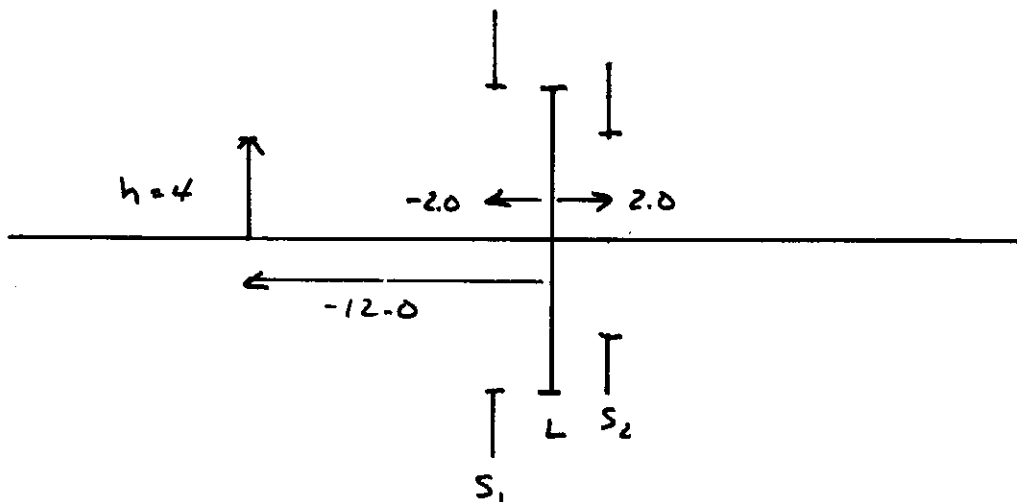


System with two stops.



$$f_2 = 6.0 \text{ cm}$$

$$S_1 : \text{dia} = 6.0$$

$$S_2 : \text{dia} = 4.0$$

$$L : \text{dia} = 6.0$$

Which aperture is the stop?

Image S_2 into object space as a potential entrance pupil.

(for this, light goes right to left!)

$$\frac{1}{-z'} = -\frac{1}{z} + \frac{1}{f_e} \quad z = 2.0$$

$$z' = 3.00 \quad (\text{to the right of the lens})$$

$$m = z'/z = 1.5$$

$$\text{then } d(\text{ep}_2) = 1.5 \cdot 4.0 = 6.0 \text{ cm}$$

All three candidate entrance pupils (S_1 , the lens aperture and the image of S_2) have the same diameter.

The entrance pupil that subtends the smallest angle (and is the entrance pupil) is the one the most to the right.

The pupil due to S_2 is the entrance pupil
 S_2 is the stop and the exit pupil (since it is already in image space)

Stop / Exit Pupil

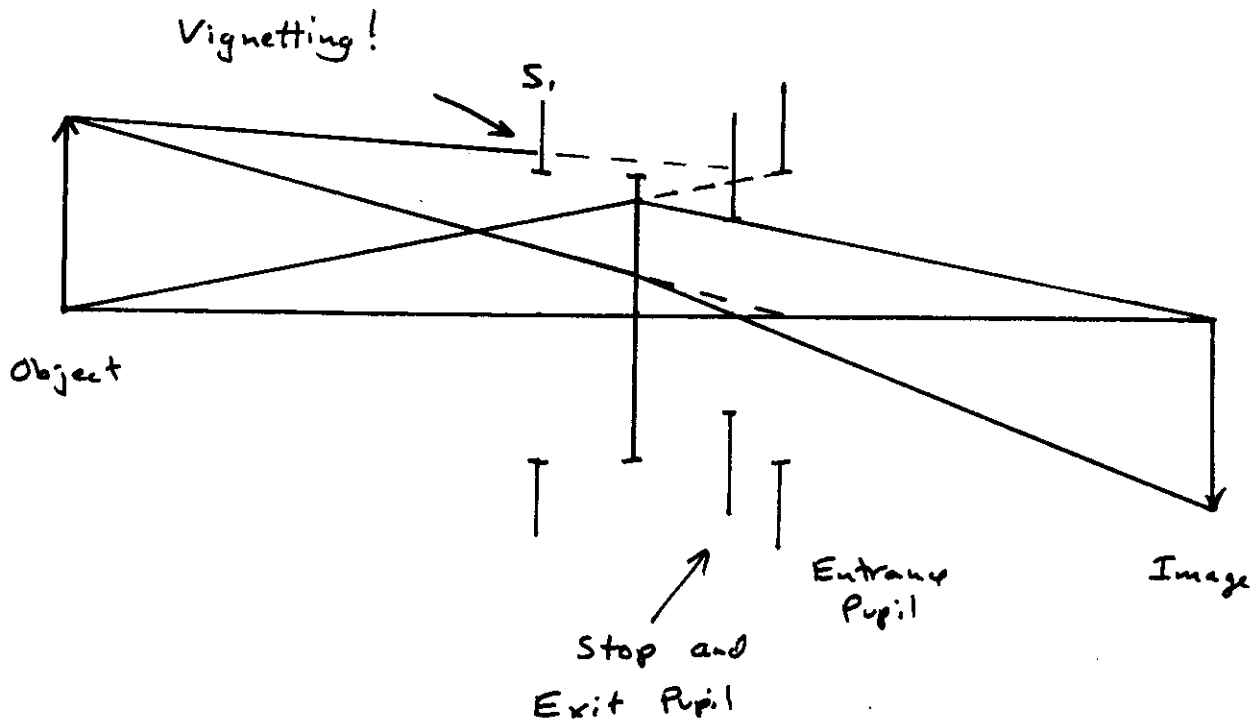
Dia = 4.0 cm

$z = 2.0$ cm from lens

Entrance Pupil

Dia = 6.0 cm

$z = 3.0$ cm from lens



Since z is $-2f_e$, the image will be at $z' = 2f_e$
 with a magnification of -1 .

While not requested, note that this system has vignetting. A ray from the top of the object to the top of the entrance pupil is blocked by the first stop.

12345
6789
101112131415
16171819202122
23242526272829
30313233343536
37383940414243
44454647484950
51525354555657
58596061626364
65666768697071
72737475767778
79808182838485
86878889909192
93949596979899
100

