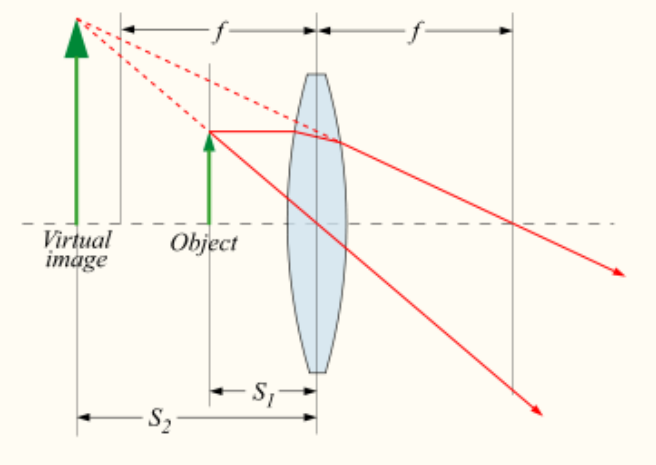
If the distances from the object to the lens and from the lens to the image are S_1 and S_2 respectively, for a lens of negligible thickness, in air, the distances are related by the **thin lens formula**

$$\frac{1}{S_1}+\frac{1}{S_2}=\frac{1}{f}.$$

Note that if $S_1 < f$, S_2 becomes negative, the image is apparently positioned on the same side of the lens as the object. Although this kind of image, known as a *virtual image*, cannot be projected on a screen, an observer looking through the lens will see the image in its apparent calculated position.



We have $f = 15, S_1 = 5$. So $S_1 < f$, S_2 becomes negative, the image is apparently positioned on the same side of the lens as the object.

$$\frac{1}{5}+\frac{1}{S_2}=\frac{1}{15} \gg S_2 = -7.5 \text{ cm}$$

Answer

The distance between the lens and the image is -7.5 cm.