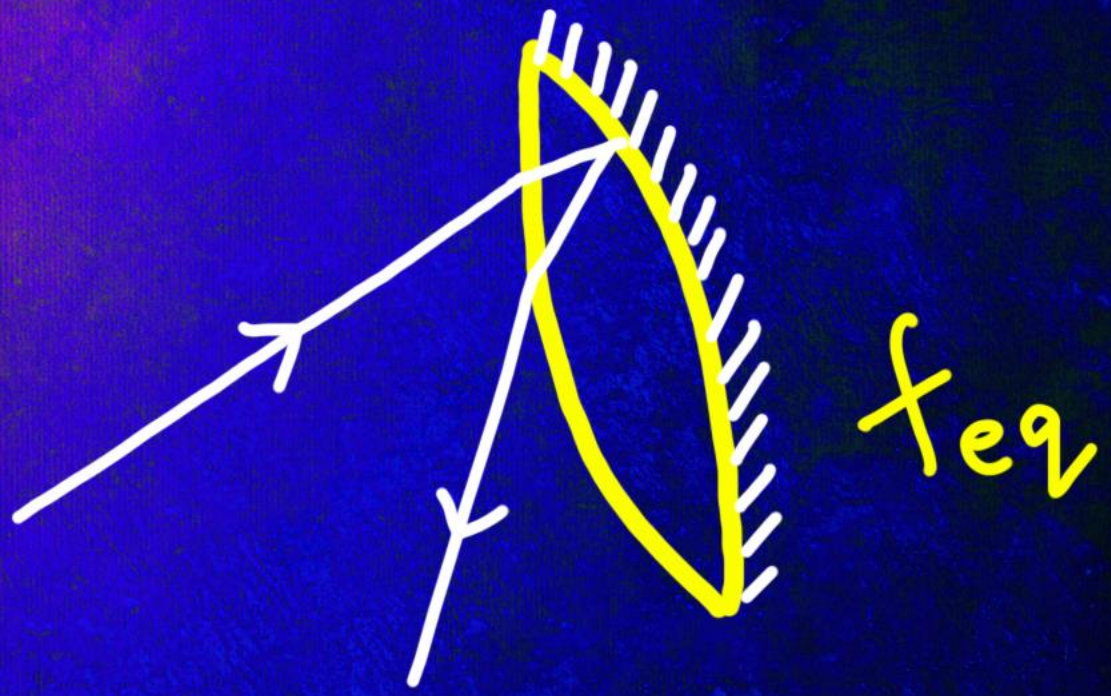
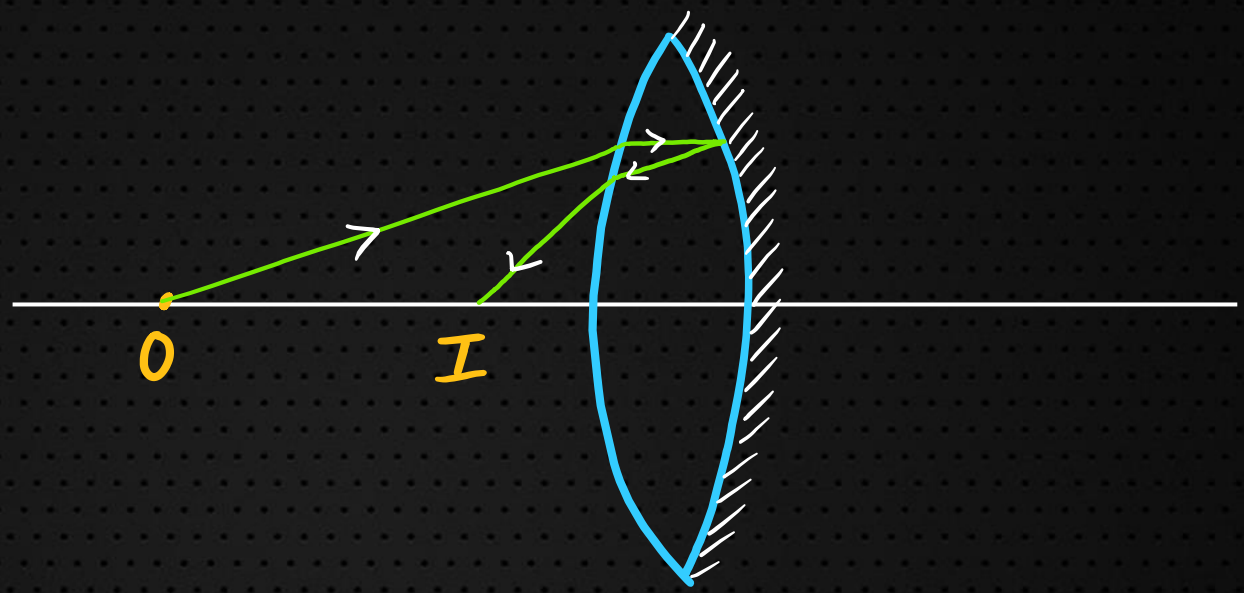
SILVERING OF LENS

TRICKS IN RAY OPTICS



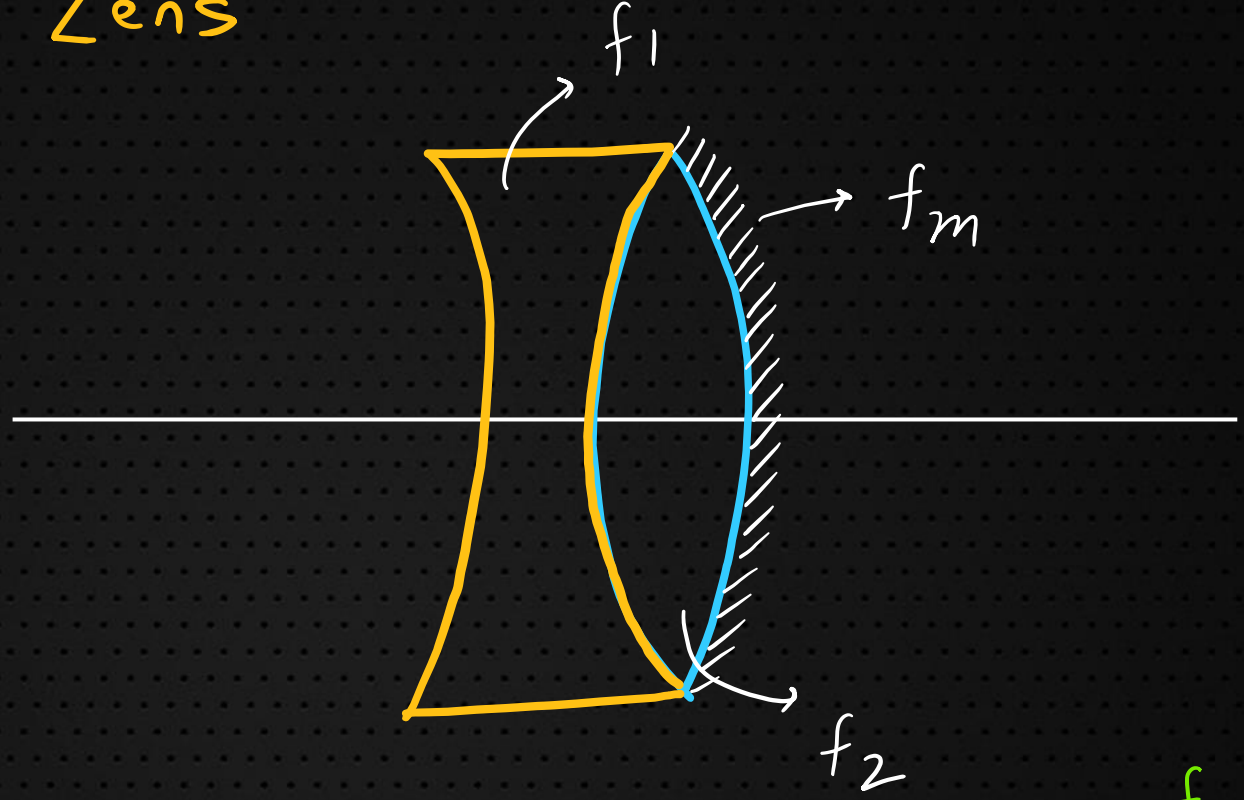
f_{eq} in a Silvered Lens



$$\Rightarrow \frac{1}{f_{eq}} = \frac{1}{f_m} - \frac{2}{f_L}$$

↳ Put f_m & f_L with sign

f_{eq} in a Silvered Lens



$$\frac{1}{f_{eq}} = \frac{1}{f_m} - 2\left(\frac{1}{f_1} + \frac{1}{f_2}\right)$$

f_{eq}

$-VE$ — Concave mirror nature

$+VE$ — Convex mirror nature

Q1. An object in placed 30 cm in front of an equiconcave lens that is made of glass of refractive index 1.5 and having radii of curvature 30 cm. The surface of the lens farther away from the object is silvered. Find the nature and position of the final image

Q 2. When the flat surface of a planoconvex lens is silvered, an object coincides with its image at a distance of 15cm from the lens. If the curved surface is silvered, the object coincides with its image at a distance of 5cm from the lens. Calculate the refractive index of glass.

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