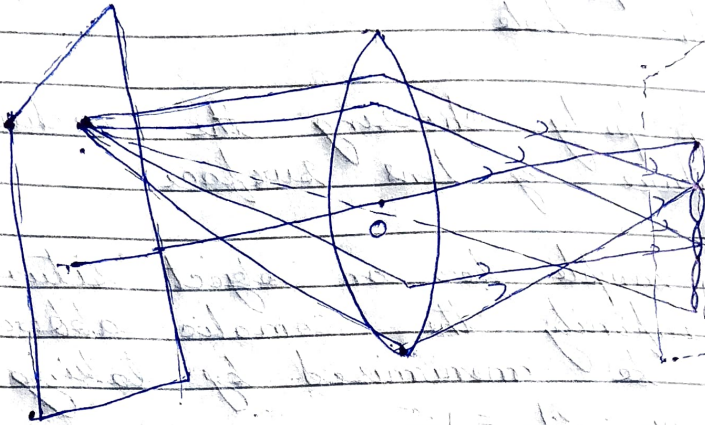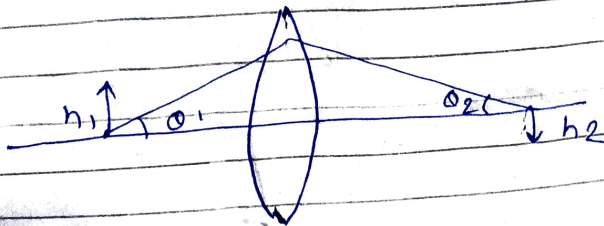# COMA ABBERATION

The aberration known as coma occurs for rays which comes from object points that lie off the len axis.

Comatic aberration is similar to spherical aberration because in both cases lens failed to bring all rays from a object to focus at the same point.

The image is comet shaped and hence the name coma.

Reduction of coma →

1) To avoid comatic abberation we must follow the abbe's sine condition

$$\mu_1 h_1 \sin \theta_1 = \mu_2 h_2 \sin \theta_2$$

(ii) The coma can be reduce by using the stops which can obstacle or circular hole.

(iii) By properly choosing the radius of curvature of lens surface.

For example for an object situated at infinity the comatic abberation may be minimised by taking a lens of $\mu = 1.5$

$$K = \frac{R_1}{R_2} = \frac{1}{9}$$