

The diagram illustrates an ellipse centered at the origin O of a Cartesian coordinate system with X and Y axes. The ellipse's major axis lies on the X -axis, and its minor axis lies on the Y -axis. Key points and distances are labeled as follows:

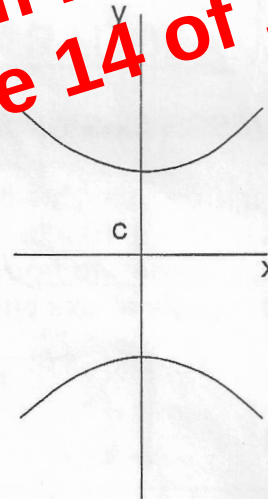
- Vertices:** A and A' are the vertices on the X -axis, while B and B' are the vertices on the Y -axis.
- Foci:** S and S' are the foci located on the X -axis.
- Directrices:** Two vertical dashed lines labeled "Directrix" are positioned on either side of the ellipse.
- Distances:**
 - a : Semi-major axis (distance from center C to vertex A).
 - b : Semi-minor axis (distance from center C to vertex B).
 - c : Distance from center C to focus S .
 - e : Eccentricity, shown as the ratio of the distance from a vertex to a focus (CS) to the distance from that vertex to the corresponding directrix (CD).
 - h : Distance from the Y -axis to the left directrix.
 - $h+c$: Distance from the Y -axis to the right focus S .
 - $h+a$: Distance from the Y -axis to the right directrix.
 - k and $k+b$: Distances from the X -axis to the horizontal dashed lines passing through B and A' respectively.

Equation of ellipse $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$

End points of Minor Axis $(h, k \pm b)$

Equation of Directrices $x=h \pm a/e$

HYPERBOLA WITH CENTRE AT ORIGIN AND TRANSVERSE AXIS ON Y-AXIS



HYPERBOLA WITH CENTRE NOT AT ORIGIN AND TRANSVERSE AXIS PARALLEL TO X-AXIS

