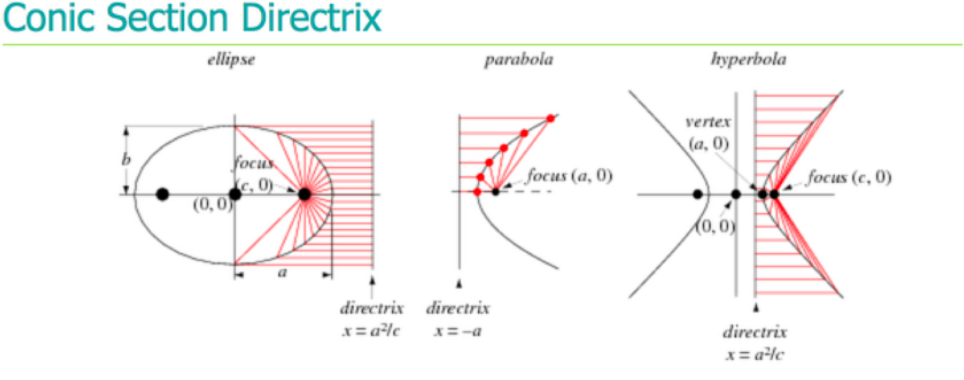
Conic Sections 2D

The curves can be defined using a straight line and a point (called the directrix and focus).



When we measure the distance:
(1) from the focus to a point on the curve, and
(2) perpendicularly from the directrix to that point.
the two distances will always be the same ratio.

(a) For an ellipse, the ratio is greater than 0 and less than 1
(b) For a parabola, the ratio is 1, so the two distances are equal.
(c) For a hyperbola, the ratio is greater than 1.
(d) For a circle, the ratio is 0