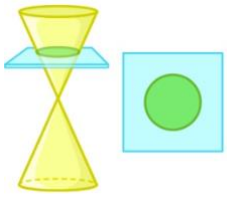
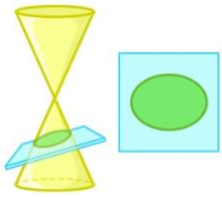
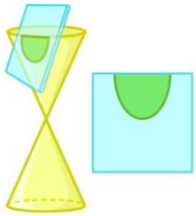
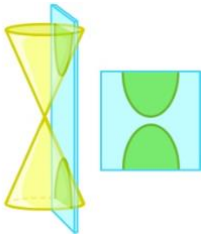
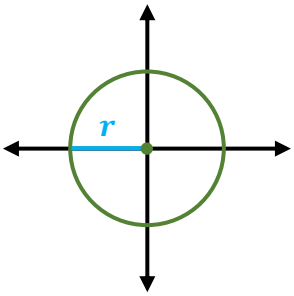
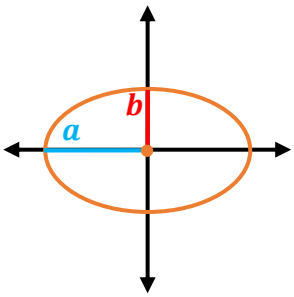
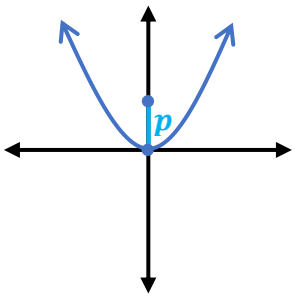
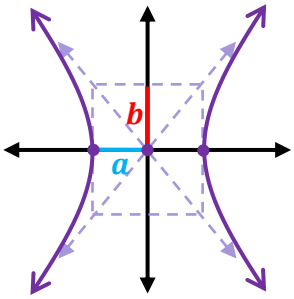
TOPIC: INTRODUCTION TO CONIC SECTIONS

Geometries from Conic Sections

- You will need to *graph*, write *equations* for, & identify *characteristics* of the following shapes
  - These shapes (**Conic Sections**) can be formed by slicing a 3D cone with a 2D plane

Circle	_____	**Parabola**	_____
			
Plane is _____	Plane is Slightly Tilted	Plane is Heavily Tilted	Plane is _____
			
$x^2 + y^2 = r^2$	$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$	$y = 4px^2$	$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

PRACTICE: How can you slice a vertically oriented 3D cone with a 2D plane to get a parabola?

(***A***) Slice the cone with a horizontal plane.
(***B***) Slice the cone with a slightly tilted plane.
(***C***) Slice the cone with a heavily tilted plane.
(***D***) Slice the cone with a vertical plane.

PRACTICE: How can you slice a vertically oriented 3D cone with a 2D plane to get a circle?

(***A***) Slice the cone with a horizontal plane.
(***B***) Slice the cone with a slightly tilted plane.
(***C***) Slice the cone with a heavily tilted plane.
(***D***) Slice the cone with a vertical plane.

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Geometries from Conic Sections

PRACTICE: A vertically oriented 3D cone is sliced with a *vertical* 2D plane. What is the conic section that will form?