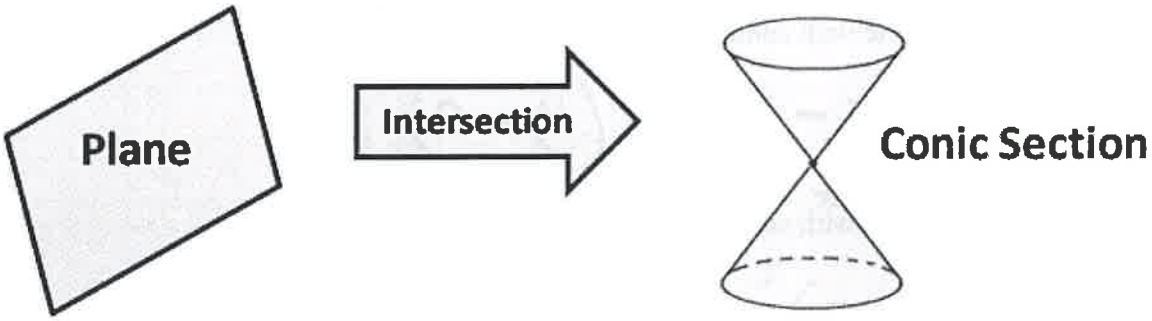
Name: Hansen Period: 4th Date: 1/28/2020

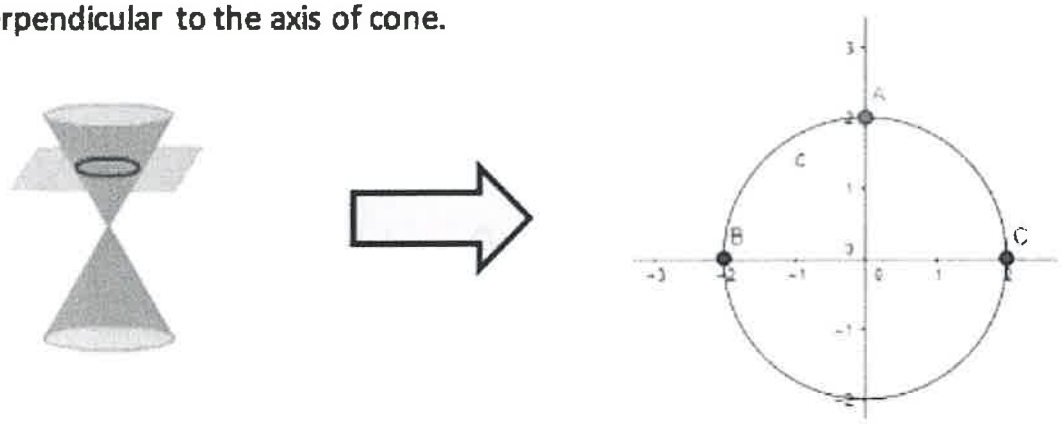
EXPLORING CONIC SECTIONS Guided Notes

A **Conic Section** is a curve formed by the intersection of a plane and a double cone.



By the intersection of this plane and the conic section, we can have a **circle**, an **ellipse**, a **parabola** or a **hyperbola.**

A **Circle** is a curve formed by the intersection of a plane and a double cone such that the plane is perpendicular to the axis of cone.



Circle

General equation: $(x-h)^2+(y-k)^2=r^2$

(h,k) is the center of the circle. Center (h,K)

Problem 1: Write the equation of circle whose center is at the origin. $(0,0)$

$(x-0)^2+(y-0)^2=r^2$

$x^2+y^2=r^2$

Equation of a circle @ origin

EXAMPLES: $(x-h)^2+(y-k)^2=r^2$

1. Write the equation of a circle with center $(-4,5)$ and radius $r=3$.

$(x+4)^2+(y-5)^2=9$

2. Write the equation of a circle with center $(7,0)$ and radius $r=4$.

$(x-7)^2+(y-0)^2=16$

$(x-7)^2+y^2=16$

3. Write the equation of a circle with center (-2 , -3) and radius r = 20.

$(x+2)^2+(y+3)^2=400$

4. Write the equation of a circle with center (0, 0) and radius r = 0.25.

$x^2+y^2=.0625$

Identify the center and radius of each circle. Then graph.

5. $(x+4)^2+(y-5)^2=9$ $(x--4)^2+(y-5)^2=r^2$ $\sqrt{r^2}=\sqrt{9}$

Center: $(-4,5)$ radius = 3

6. $x^2+(y+2)^2=49$ $\sqrt{49}$

Center: $(0,-2)$ $r=7$