*AAT

Name: Key

Chapter 11: Conics Review (IC)

Date: _____ Period: _____

Determine if each algebraic equation represents a circle, ellipse, hyperbola or parabola.

If the equation represents a circle

- Determine the coordinates of the center
- Determine the length of the radius

If the equation represents an ellipse

- Determine the coordinates of the center, foci, vertices and co-vertices
- Determine equations for the major and minor axes

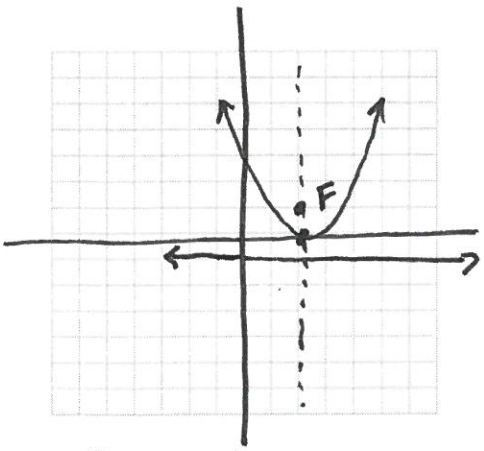
If the equation represents a hyperbola

- Determine the coordinates of the center, foci, vertices, and co-vertices
- Determine equations for the asymptotes, transverse axis and conjugate axis

If the equation represents a parabola

- Determine the coordinates of the vertex and focus
- Determine equations for the line of symmetry and directrix

1. $y = \frac{1}{4}(x-2)^2$



Parabola

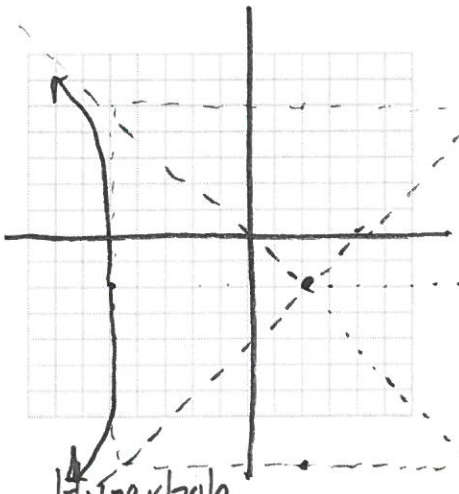
V(2,0)

F(2,1)

Axis: $x=2$

Directrix: $y=-1$

2. $\frac{(x-2)^2}{64} - \frac{(y+2)^2}{49} = 1$



Hyperbola

C(2,-2); Asy: $y = \pm\frac{7}{8}x$

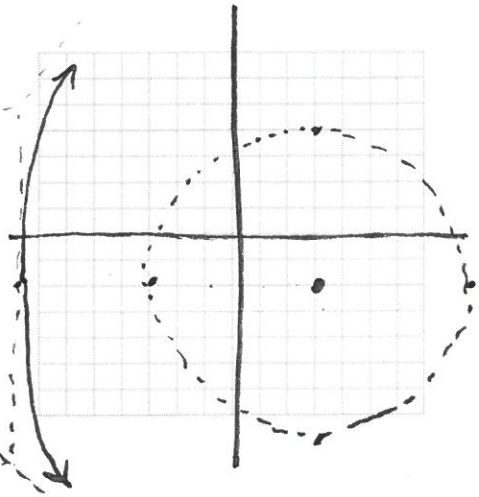
V(-6,-2), (10,-2)

CV (2,-9), (2,5) conj. axis $x=2$

F $(2 \pm \sqrt{113}, -2)$ transv. axis $y=-2$

(-8.63,-2) (12.63,-2)

3. $(x-3)^2 + (y+2)^2 = 36$

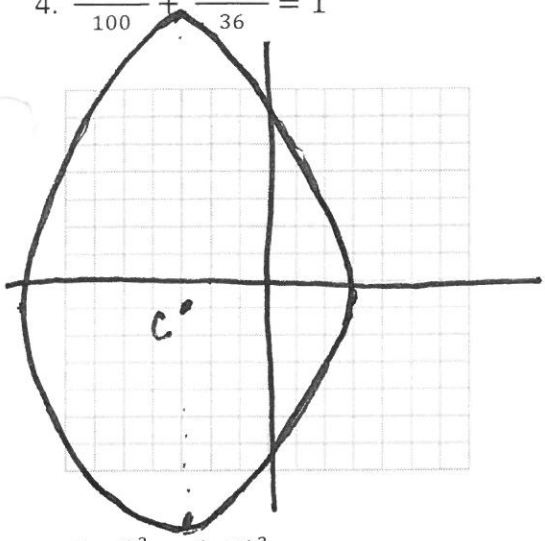


Circle

C(3,-2)

r = 6

4. $\frac{(y+1)^2}{100} + \frac{(x+3)^2}{36} = 1$



Ellipse

C(-3,-1)

V(-3,-11) ; (-3,9)

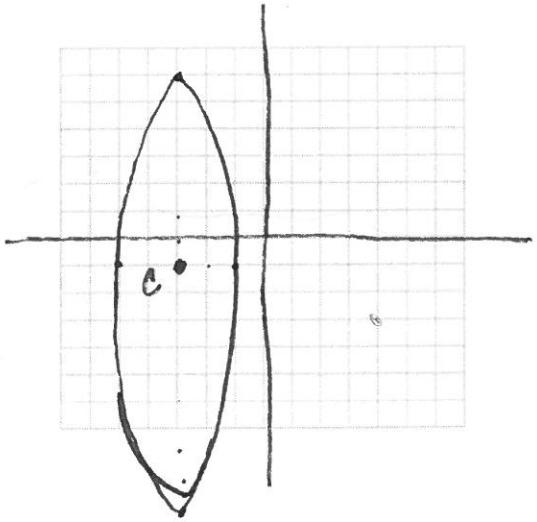
CV(-9,-1) ; (3,-1)

F(-3,-9) ; (-3,7)

maj: $x=-3$

min: $y=-1$

5. $\frac{(y+1)^2}{64} + \frac{(x+3)^2}{4} = 1$



Ellipse $c^2=a^2-b^2$

C(-3,-1)

V(-3,-9) ; (-3,7)

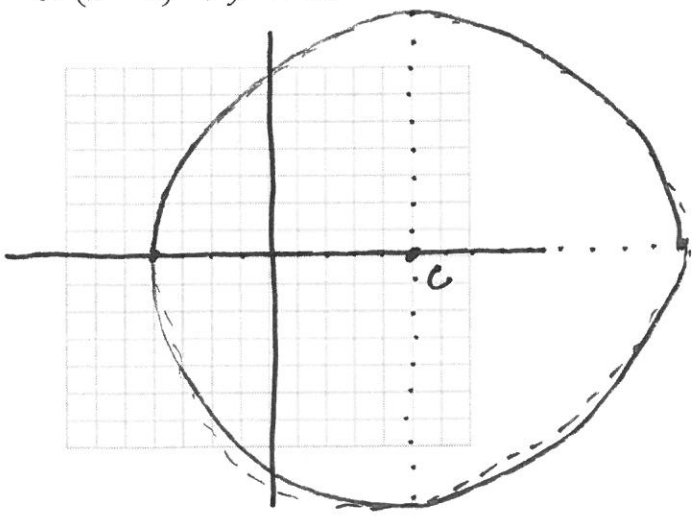
CV(-5,-1) ; (-1,-1)

$F(-3,-1\pm 2\sqrt{15})$

(-3,-8.75)(-3,6.75)

maj: $x=-3$; min($y=-1$)

6. $(x-5)^2 + y^2 = 81$



Circle

C(5,0)

$r=9$