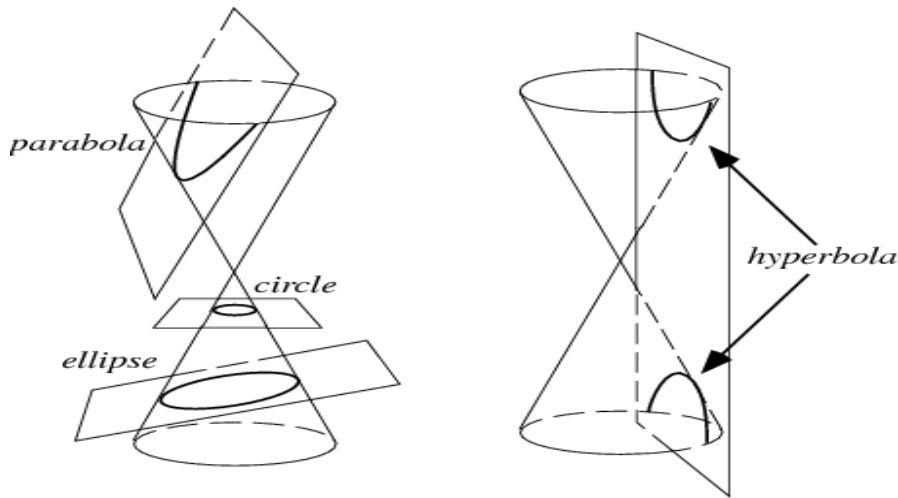


Classifying Conics



STANDARD FORM OF EQUATIONS OF TRANSLATED CONICS		
Conic Section	Equation	
Circle	$(x - h)^2 + (y - k)^2 = r^2$	
	Horizontal Axis	Vertical Axis
Parabola	$(y - k)^2 = 4p(x - h)$	$(x - h)^2 = 4p(y - k)$
Ellipse	$\frac{(x - h)^2}{a^2} + \frac{(y - k)^2}{b^2} = 1$	$\frac{(x - h)^2}{b^2} + \frac{(y - k)^2}{a^2} = 1$
Hyperbola	$\frac{(x - h)^2}{a^2} - \frac{(y - k)^2}{b^2} = 1$	$\frac{(y - k)^2}{a^2} - \frac{(x - h)^2}{b^2} = 1$

CLASSIFYING CONICS	
If the graph of $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$ is a conic, then the type of conic can be determined as follows:	
Conic Section	Identification
Parabola	x^2 , but no y^2 or y^2 , but no x^2
Circle	x^2 and y^2 are the same positive coefficient
Ellipse	x^2 and y^2 are different positive coefficients
Hyperbola	x^2 and y^2 are different negative coefficients

Classifying Conics

Examples: Classify as a parabola, circle, ellipse, or hyperbola.

1) $x^2 + y^2 - 6x + 4y + 9 = 0$ _____

2) $x^2 + 4y^2 - 6x + 16y + 21 = 0$ _____

3) $4x^2 - y^2 - 4x - 3 = 0$ _____

4) $y^2 - 4y - 4x = 0$ _____

5) $4x^2 + 3y^2 + 8x - 24y + 51 = 0$ _____

6) $4y^2 - 2x^2 - 4y - 8x - 15 = 0$ _____

7) $25x^2 - 10x - 200y - 119 = 0$ _____

8) $4x^2 + 4y^2 - 16y + 15 = 0$ _____

9) $4x^2 - y^2 + 8x - 6y + 4 = 0$ _____

10) $2x^2 + 2y^2 - 8x + 12y + 2 = 0$ _____

11) $\frac{(x-2)^2}{16} + \frac{(y-2)^2}{49} = 1$ _____

12) $(x-2)^2 = 4(2)(y-1)$ _____

13) $(x-4)^2 + (y-2)^2 = 16$ _____

14) $\frac{(y-2)^2}{16} - \frac{(x-2)^2}{49} = 1$ _____