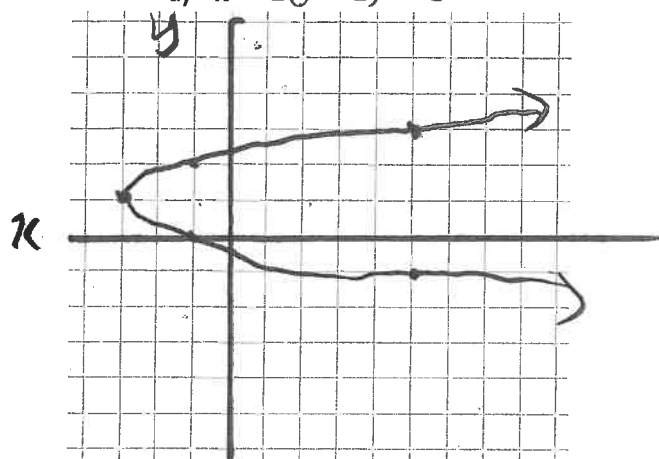
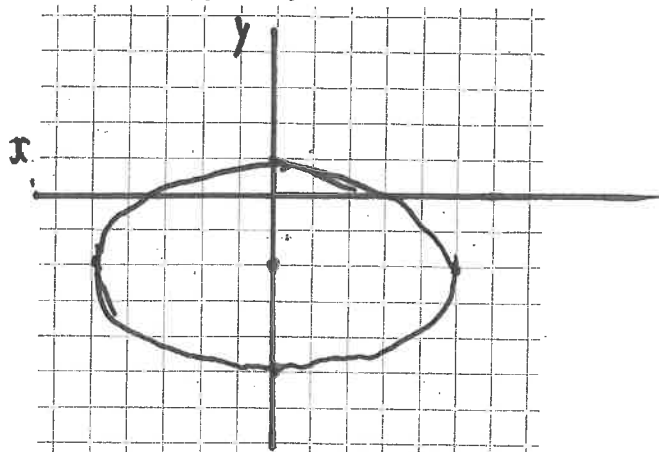


1. Graph each conic:

a) $x = 2(y-1)^2 - 3$



b) $\frac{x^2}{25} + \frac{(y+2)^2}{9} = 1$



2. Write the equation of each conic in standard form:

a) Circle with centre $(2, -3)$ and radius 6.

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

b) Ellipse with vertices $(-3, 1)$ & $(5, 1)$ and a minor axis of length 4center $(1, 1)$ major length = 8

$$\frac{(x-1)^2}{16} + \frac{(y-1)^2}{4} = 1$$

c) Parabola passing through the points $(-6, 2)$ & $(2, 2)$ and having a maximum value of $y = 26$.

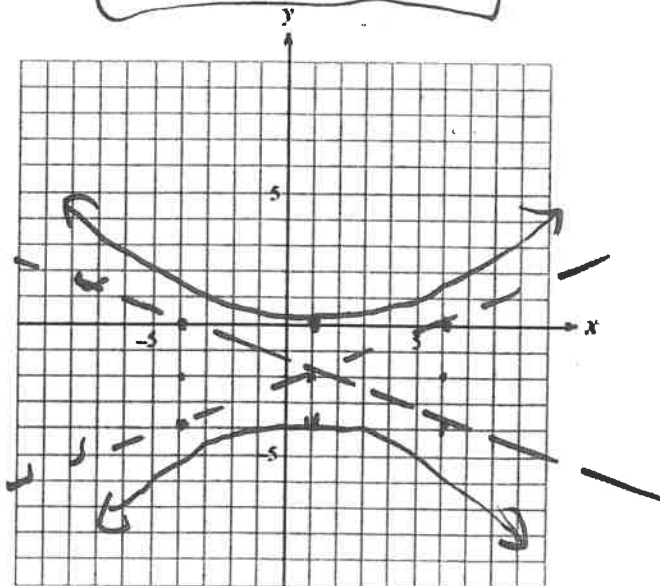
vertex $(-2, 26)$
 $y = a(x+2)^2 + 26$
 $2 = a(2+2)^2 + 26$
 $-24 = 16a$
 $a = -3/2$
 $y = -\frac{3}{2}(x+2)^2 + 26$

d) A hyperbola has center $(3, -2)$ and opens horizontally. Write the equation of the hyperbola if the length of the transverse axis is 8 and the length of the conjugate axis is 6.

$$\frac{(x-3)^2}{16} - \frac{(y+2)^2}{9} = +1$$

3. Sketch the graph of $4(x-1)^2 - 25(y+2)^2 = -100$.

$$\frac{(x-1)^2}{25} - \frac{(y+2)^2}{4} = -1$$



4. State the type of conic, change to standard form, and graph:

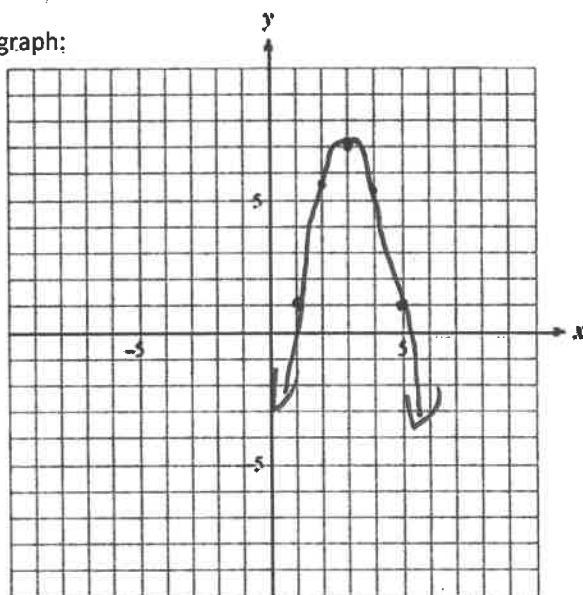
a) $3x^2 - 18x + 2y + 13 = 0$

parabola

$$3(x^2 - 6x + 9) + 13 - 27 - 2y$$

$$3(x-3)^2 - 14 = -2y$$

$$y = -\frac{3}{2}(x-3)^2 + 7$$



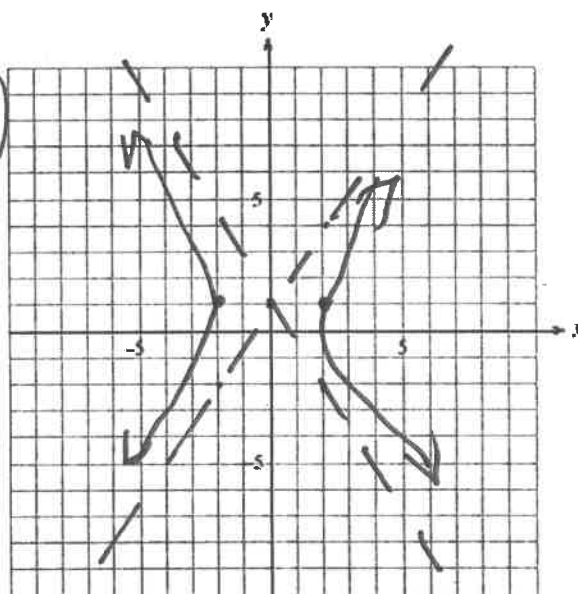
b) $22.5x^2 - 10y^2 + 20y - 100 = 0$

$$22.5x^2 - 10(y^2 - 2y + 1) = 100$$

$$22.5x^2 - 10(y-1)^2 = 90$$

$$\frac{x^2}{4} - \frac{(y-1)^2}{9} = 1$$

hyperbola



$3x^2 + 3y^2 + 12x - 18y - 36 = 0$

Circle

$$3(x^2 + 4x + 4) + 3(y^2 - 6y + 9) = 36$$

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

$$(x+2)^2 + (y-3)^2 = 12$$

OR

$\div$ all by 3

$$(x^2 + 4x + 4) + (y^2 - 6y + 9) = 12$$

$+4$
 $+9$

