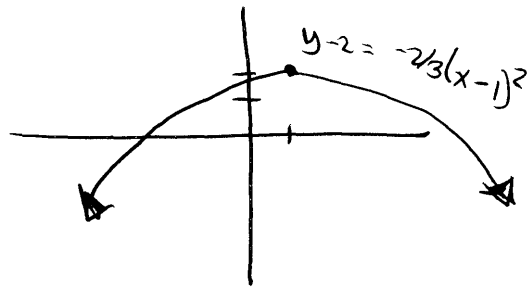


Conic Section Quiz Review Answers

① Parabola
 $y - 2 = -\frac{2}{3}(x - 1)^2$

$(x, y) = (1, 2) = \text{Turning Point}$

$a = -\frac{2}{3} \rightarrow \text{down, wide}$

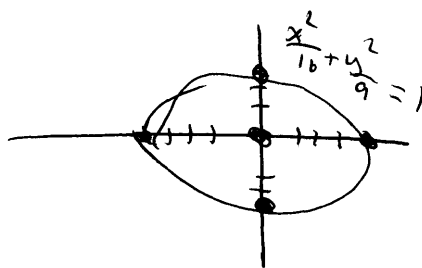


② Ellipse

Center $(0, 0)$

x stretch = 4

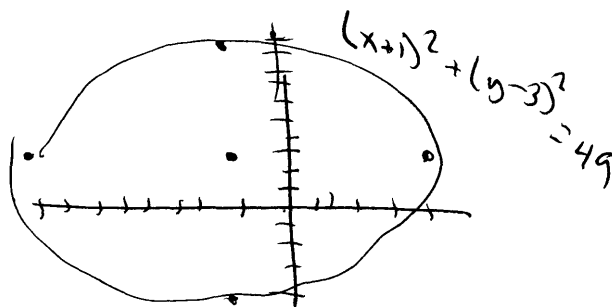
y stretch = 3



③ Circle

Center $(-1, 3)$

radius = 7



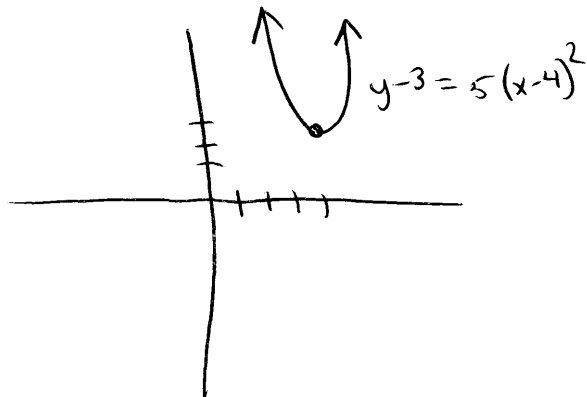
④ $y - 3 = 5(x - 4)^2$

Parabola

Turning Point $(4, 3)$

opens up

narrow



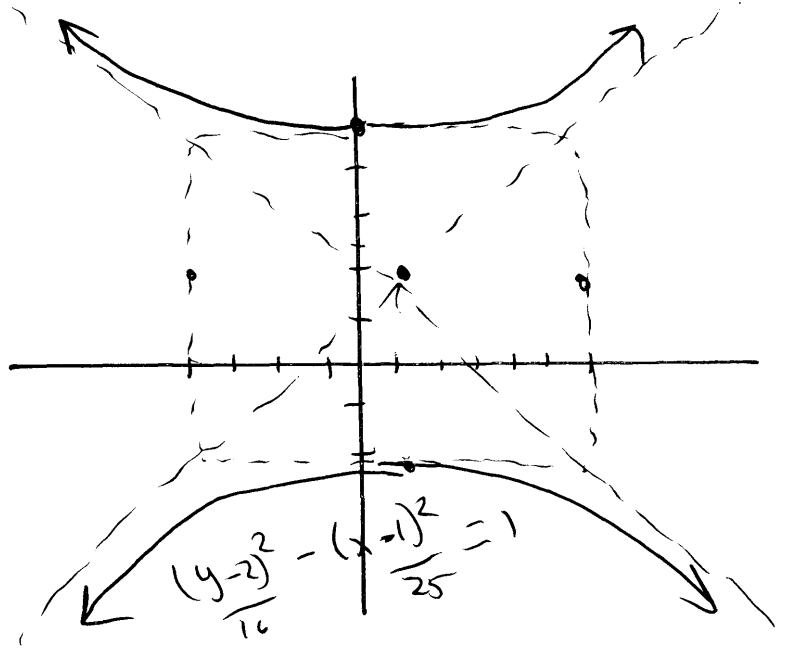
5)

Hyperbola

Center (1, 2)

x stretch = 5

y stretch = 4



4)

$$\frac{9(x+3)^2}{36} + \frac{4(y-2)^2}{36} = \frac{36}{36}$$

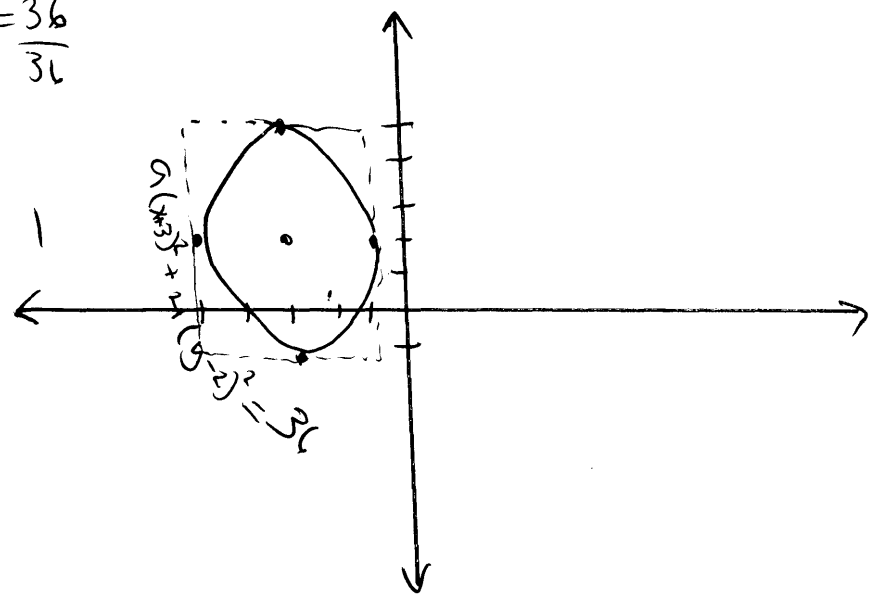
$$\frac{(x+3)^2}{4} + \frac{(y-2)^2}{9} = 1$$

Ellipse

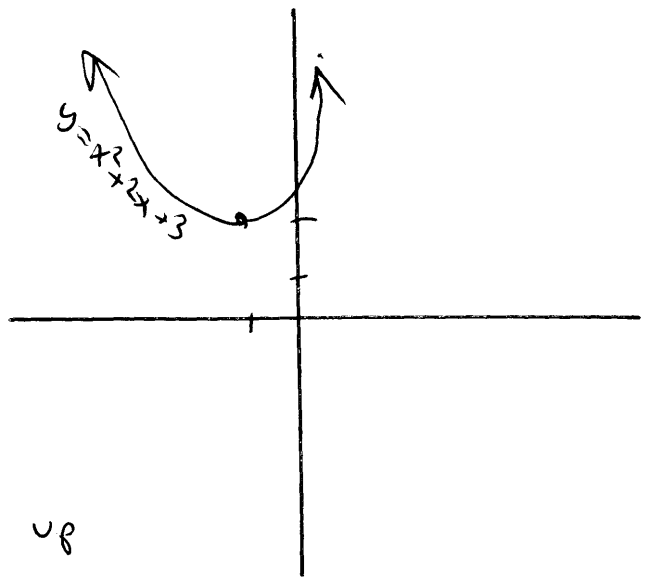
Center (-3, 2)

x stretch = 2

y stretch = 3



7) $y = x^2 + 2x + 3$
 $y - 3 = x^2 + 2x$
 $y - 3 + \underline{\quad} = x^2 + 2x + \underline{\quad}$
 $y - 3 + (+1)^2 = x^2 + 2x + \underline{(+1)^2}$
 $y - 2 = 1(x + 1)^2$



Parabola TP $(-1, 2)$ opens up
 Normal

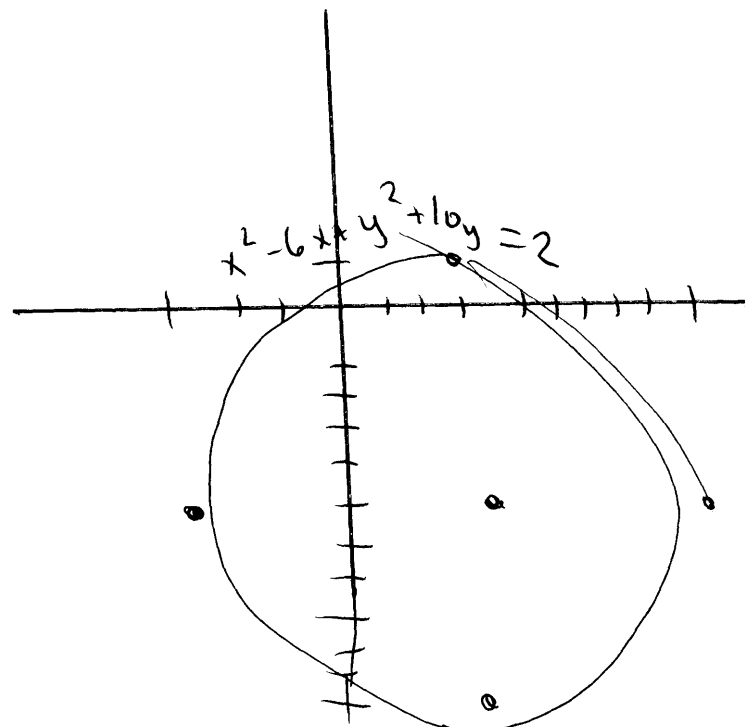
8) $x^2 - 6x + y^2 + 10y = 2$

$$x^2 - 6x + \underline{(-3)^2} + y^2 + 10y + \underline{(+5)^2} = 2 + \underline{(-3)^2} + \underline{(+5)^2}$$

$$(x - 3)^2 + (y + 5)^2 = 2 + 9 + 25$$

$$(x - 3)^2 + (y + 5)^2 = 36$$

**Center $(3, -5)$ Circle
 radius = 6**



$$(9) \quad y - 5 = a(x + 1)^2$$

a needs to be any positive # stronger than 1

example

$$y - 5 = 10(x + 1)^2$$

$$(10) \quad \frac{(x+4)^2}{4} + \frac{(y-1)^2}{36} = 1$$

$$(11) \quad \frac{(x-5)^2}{25} + \frac{(y+3)^2}{25} = 1$$

$$\text{or} \quad (x-5)^2 + (y+3)^2 = 25$$

$$(12) \quad \frac{(x-2)^2}{16} - \frac{(y+5)^2}{9} = 1$$

or

$$\frac{(y+5)^2}{9} - \frac{(x-2)^2}{16} = 1$$