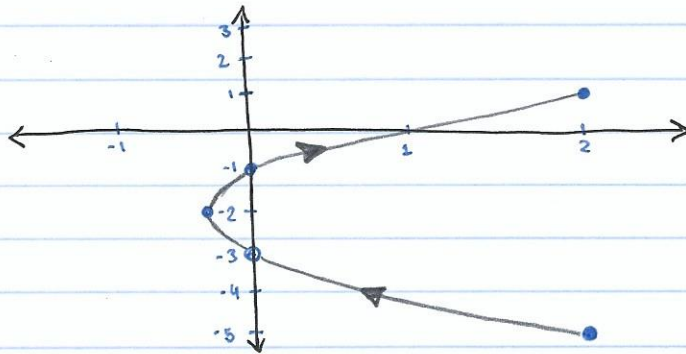


(Exam Returned)

■ Parametric Curves:

Ex: Sketch: (x,y) given by

$x = t^2 + t$	t	-2	-1	-1/2	0	1
$y = 2t - 1$	x	2	0	-1/4	0	2
$-1 \leq t \leq 1$	y	-5	-3	-2	-1	1



Sketching by points can be tedious.

Ex: "Eliminate" the parameter."

$$x = t^2 + t, \quad y = 2t - 1, \quad -1 \leq t \leq 1$$

$$x = \left(\frac{y+1}{2}\right)^2 + \left(\frac{y+1}{2}\right) \quad \frac{y+1}{2} = t$$

$$x = \frac{y^2 + 1 + 2y}{4} + \frac{2y + 2}{4} = \frac{y^2 + 4y + 3}{4}$$

$x = \frac{(y+3)(y+1)}{4}$ The problem now though is that I don't have direction arrows.

Review:

$$y = ax^2 + bx + c = f(x)$$

$$x = ay^2 + by + c = h(y)$$

$$\text{vertex: } \left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right)\right)$$

$$\text{vertex: } \left(h\left(\frac{-b}{2a}\right), \frac{-b}{2a}\right)$$

So, our vertex will be: $y = -1/2\left(\frac{1}{2}\right) = -2$
 $x = -1/4$ } we can use this to know "t".

A way to get direction:

$$\frac{dy}{dt} = 2 > 0$$