

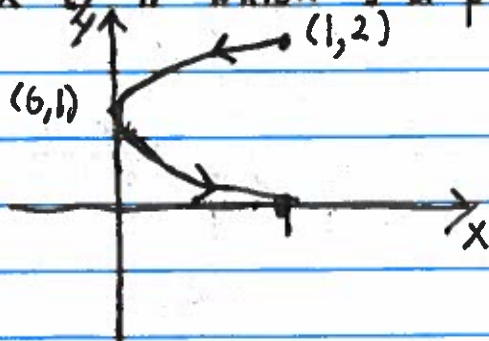
Homework #1

py. 668, #6

$$x = \cos^2(t), y = 1 + \cos(t), 0 \leq t \leq \pi$$

t	x	y
0	1	2
$\pi/4$	$1/2$	$1 + 1/\sqrt{2}$
$\pi/2$	0	1
$3\pi/4$	$1/2$	$1 - 1/\sqrt{2}$
π	1	0

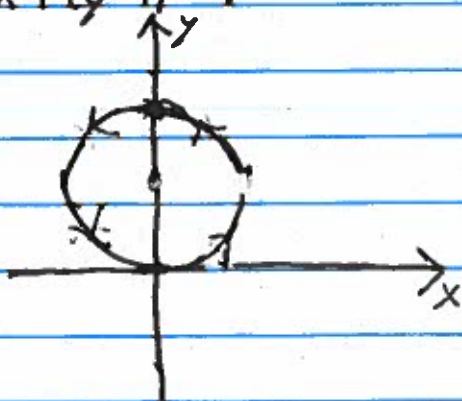
Note, $x = (y-1)^2$ which is a parabola.



py. 668, #10

$$x = \sin(t), y = 1 - \cos(t)$$

$$\Rightarrow x^2 + (y-1)^2 = 1$$



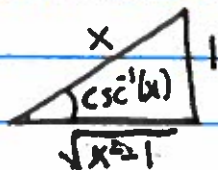
pg. 668, #16

$$x = \csc(t), y = \cot(t)$$

$$\Rightarrow t = \csc^{-1}(x)$$

$$\Rightarrow y = \cot(\csc^{-1}(x))$$

We can draw a triangle to simplify



Therefore,

$$y = \sqrt{x^2 - 1} \Rightarrow x^2 - y^2 = 1$$

pg. 668, #30

(a) III

(b) I

(c) IV

(d) II

pg. 669, #34

(a) V

(b) I

(c) II

(d) VI

(e) IV

(f) III