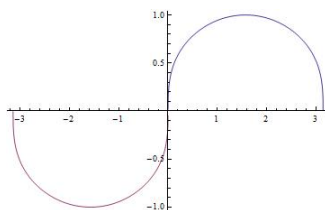
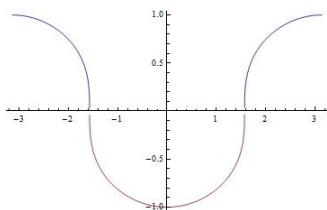
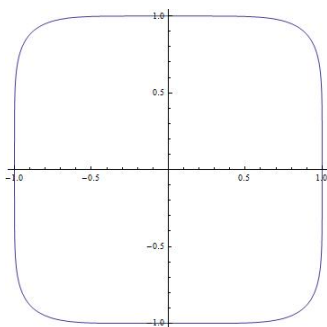
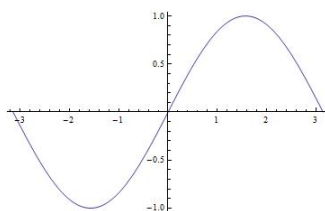
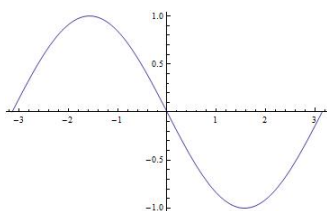


1. Match the graphs of the parametric equations  $x = f(t)$  and  $y = g(t)$  in I, II with the parametric curves labeled (a), (b). Give reasons for your choices.

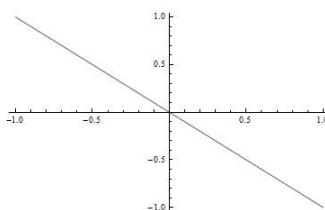
I



II



(a)



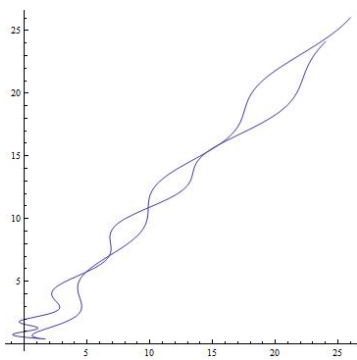
(b)

2. Match the parametric equations with the graphs labeled (a)-(c). Give reasons for your choices.

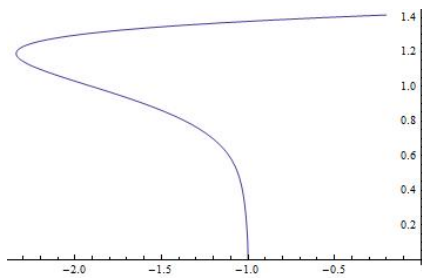
(I)  $x = t^2 + \sin 6t, y = t^3 + \cos^2 t + \sin t$

(II)  $x = \frac{\sin 2t^3}{t^2 + 2t + 2}, y = \frac{\cos 2t^3}{t^2 + 2t + 2}$

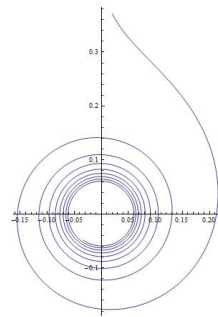
(III)  $x = t^4 - 2t^3 + 0.3t^2 - 0.2t - 1, y = \sqrt{t}$



(a)



(b)



(c)

3. Find  $dy/dx$  and  $d^2y/dx^2$ . For which values of  $t$  is the curve convex upward?

(a)  $x = e^{t^2} + 1, y = e^{2t^2} + 5e^{t^2}$

(b)  $x = e^{t^2+t}, y = te^{-t^2}$

Course Homework

Jan 22, Wednesday : **10.1** 5, 9, 11, 15, 24, 28

Jan 24, Friday : **10.2** 1, 3, 7, 13, 29, 31, 33, 41