

MATH 162 EXAM 3, Spring 2009

		Name:	Score	
1.	Eliminate the parameter and find the Cartesian equation: a) $x = 2 - 3t, y = 5 + 4t.$	$x = 3 \cosh t, y = 4 \sinh t.$	1	
			2	
			3	
			4	
			5	
			6	
			7	
			8	
Ans:_____.		Ans:_____.		
2.	Find a parametric equation for each of the curves below: a) $(x - 3)^2 + (y + 1)^2 = 1.$	b) $x = 2y^2 - 7.$	9	
			10	
			Tot	
Ans:_____.		Ans:_____.		
3.	Given the parametric equations: $x = \sin 2\pi t, y = \cos 2\pi t$ , find: a) $dy/dx$	b) The equation of the tangent at $t = 1/8$ .		
			Ans:_____.	
4.	Let $x = t^2 + 5t$ , and $y = t^3 - t$ . Find the points where the tangent is a) Horizontal.	b) Vertical.		
			Ans:_____.	
5.	Identify the names of the graphs described by the following equations:	a) $x = t^3, y = t^6.$ Ans:_____.	b) $x = 2 - \cos t, y = 5 \sin t.$ Ans:_____.	
				c) $x^2 - y^2 + 2x = 8.$ Ans:_____.
	e) $r = 5 \sin \theta.$ Ans:_____.	f) $r = 4/(2 + \sin \theta).$ Ans:_____.		
Extra Space				

		Name:
6.	Find the speed at $t = \pi/3$ of a particle moving along the astroid $x = \cos^3 t$ , $y = \sin^3 t$ ,	Ans:_____.
7.	a) Find a Cartesian equation for $r = 4 \cos \theta$ .	b) Find a polar equation for $x^2 + y^2 = 9$ .
	Ans:_____.	Ans:_____.
8.	We wish to compute the area that lies inside $r = 4 \cos \theta$ and outside $r = 2$ .	
	a) Find the points of intersection.	b) Set up the integral (do not evaluate!)
	Ans:_____.	Ans:_____.
9.	Find the center and foci of the conic $4y^2 - x^2 + 40y - 4x + 60 = 0$	
	Center:_____.	Foci:_____.
10.	Given the conic $r = 12/(4 - \cos \theta)$ :	
	a) Find the eccentricity and identify the conic.	b) Find the directrix equation and foci. Sketch the conic.
	Eccentricity:_____. Conic: _____.	Eq: _____, Foci:_____.
	Extra Space	