

MATH 166
SUMMER 2012
QUIZ 27

1. Consider the parametric equations $x = \sin(2t)$ and $y = \sin(t)$, $0 \leq t \leq 2\pi$.
 - a) (5 pt) Find $\frac{dy}{dt}$ and $\frac{dx}{dt}$ and determine the critical numbers.
 - b) (5 pt) Find the values of t where x and y decrease and increase (can just make a table).
 - c) (5 pt) Find where the derivative, $\frac{dy}{dx}$ is 0 and where the derivative is undefined.
 - d) (5 pt) Sketch the graph of the curve defined by these parametric equations.
 - e) (5 pt) Find the area enclosed by this curve.