

MA 2733

Worksheet 2 – August 28, 2014

Name _____

1. Consider the parametric curve $x = e^{-2t} - t$, $y = te^t$ and the x -axis for t between 0 and 1.

(a) Set up the integral for the area between this parametric curve and the x -axis over the given t -interval.

(b) Solve the integral from part (a).

(c) Set up (but do not solve) an integral for the arc length of this curve over the given t -interval.

2. Make a rough sketch of the curves given by the following polar equations:

(a) $r = \sin 2\theta$

(b) $r = 1 + \sin 2\theta$

3. Find the tangent line to $r = \sin 2\theta$ at $\theta = \pi/6$. Add a graph of the tangent line to your sketch from the above problem.