

MA 2733

Worksheet 2 – August 30, 2013

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