Math 53 Discussion

Practice Problems: Area and arc length of parametric curves, introduction to polar curves

1) Find the area of the region enclosed by the curve $x(t) = 1 - t, y(t) = e^t$ and the vertical lines $x = 0$, $x = 2$.

2) Find the arc length of the curve $x(t) = e^t + e^{-t}, y(t) = 2t - 5$ for $0 \leq t \leq 3$.

3) Sketch the polar curve $r = 4 \sin 3\theta$. It may help to first plot r as a function of θ in Cartesian coordinates.