

Quiz 2

Math 253

Name:

Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

1. [2] Consider the function $f(x) = x^2$ for any real x . Explain why this function has no inverse.

2. [3] Consider the parametric equations $x(t) = t^2$ and $y(t) = e^t$ for $-2 \leq t \leq 0$.

- Plot some points for the corresponding parametric curve.

- Eliminate the parameter to find a Cartesian equation of the curve.

3. [5] The curve $y = \sqrt{4 - x^2}$, $-1 \leq x \leq 1$, is an arc of the circle $x^2 + y^2 = 4$. Find the area of the surface obtained by rotating this arc about the x -axis.