

Name: _____

Math 121

Self-Assessment Quiz #11

May 6, 2022

- Please see the course webpage for the answer key.

1. Consider the Parametric Curve represented by $x = e^t + \frac{1}{1 + e^t}$ and $y = 2 \ln(1 + e^t)$.

(a) Write the equation of the tangent line to this curve when $t = 0$.

(b) **COMPUTE** the **arclength** of this parametric curve for $0 \leq t \leq \ln 3$.

~~(c) Set up, BUT DO NOT EVALUATE!! the definite integral representing the surface area obtained by rotating this curve about the y-axis, for $0 \leq t \leq \ln 3$.~~

2. ~~Consider a different Parametric Curve represented by $x = t + e^{2t}$ and $y = \ln \sqrt{8e^t}$. **COMPUTE** the surface area obtained by rotating this curve about the y-axis, for $0 \leq t \leq 3$.~~