

Name: \_\_\_\_\_

Math 121

Self-Assessment Quiz #11

Nov 19, 2021

- 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  $y = \ln \sqrt{8 + e^t}$ . **COMPUTE** the surface area obtained by rotating this curve about the y-axis, for  $0 \leq t \leq 3$ .~~