Name:_____

Math 121 Self-Assessment Quiz #11 December 2, 2022

• Please see the course webpage for the answer key.

1. Consider the Parametric Curve represented by $x = e^t + \dfrac{1}{1+e^t}$ 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 $0 \le t \le \ln 3$.

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

2. Consider a different Parametric Curve represented by $x = t + e^{2t}$ and $y = 1 + \sqrt{8}\, e^t$. **COMPUTE** the **surface area** obtained by rotating this curve about the y-axis, for $0 \le t \le 3$.