

## QUIZ 7

Name \_\_\_\_\_

1. What is the arclength of the function  $f(x) = \cosh x$  ( $\cosh x = 1/2(e^x + e^{-x})$  is called a catenary and describes the arc of a rope or wire suspended between two supports) from -1 to 1? (Hint:  $\cosh^2 x - \sinh^2 x = 1$ ).
2. Set up but do not integrate the integral needed to find the arclength of the parametric function defined by  $x = te^t$  and  $y = \cos e^t$ .
3. Take the region bounded by  $y = e^x$ ,  $y = 0$ ,  $x = 0$ ,  $x = 1$  and rotate it about the line  $y = 3$ . Set up the integral needed to find the volume of the resulting solid. Don't integrate.