1. (10 pts.) Consider the integral $I = \int_0^2 e^{-x^2} dx$. Using a Riemann sum with right endpoints, how many rectangles would we need to guarantee accuracy to within 0.001 of the actual value of $I$?

2. (10 pts.) Consider the initial value problem $y' = y - 2, y(0) = 1$.
   (a) By hand, use Euler’s method with 2 steps of size 1 to estimate $y(2)$.
   (b) Is $y(t) = 2 - e^t$ a solution to this initial value problem? Explain.