2. (7 points) Use a Riemann Sum with 4 equal subdivisions to find a lower estimate for 

\[ \int_0^2 e^x + 1 \, dx. \]

Clearly indicate whether you are using a left-hand sum or a right-hand sum, and show all intermediate calculations. Show your answer to three decimal places (or in exact form).

3. (7 points) Let \( f(x) = \cos(x) + bx \) and \( g(x) = x^2 - x \). Find the value of \( b \) such that \( f(x) > g(x) \) on \( [0, 1] \) and the area between the curves from \( x = 0 \) to \( x = 1 \) is equal to 1.