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.