

1. Consider the integral $\int_0^1 (1 - e^x) dx$.

(a) (4 points) **Estimate** the integral $\int_0^1 (1 - e^x) dx$ using **four** approximating rectangles of equal width and the **left endpoints**. (That is, find L_4 .)
Leave your answer as a sum; you do not need to simplify your answer.

(b) (3 points) Determine whether the estimate you found in part (a) is an underestimate, an overestimate, or neither of the actual value of the integral. Briefly explain your reasoning.

(c) (3 points) Evaluate the integral $\int_0^1 (1 - e^x) dx$ directly using the Evaluation Theorem.
Simplify your answer.

$L_4 =$

Under/Overestimate/Neither?

$\int_0^1 (1 - e^x) dx =$
