

Calc I in class problems

on beginning integration

2025-11-07

1. Use the fundamental theorem of calculus to evaluate

$$\int_0^2 (4x^3 - x + e^x) dx.$$

2. Suppose an object starts at $x(0) = 1$ and has velocity given by $x'(t) = 2t - 1$. Find the position of the object at time $t = 2$.
3. The complete graph of a function f is shown in the figure below; it consists of a quarter circle and a straight line segment. Evaluate

$$\int_{-2}^3 f(x) dx.$$

