the fundamental theorem of calculus, part 2

definite integrals

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Part 2 is based on definite integrals

If $F(x)$ is an antiderivative of a continuous function $f(x)$, i.e., $F'(x) = f(x)$, then:

$$\int_a^b f(x)\,dx = F(b) - F(a)$$

- This part uses definite integrals as the primary object and computes them via indefinite integrals
- Working with definite integrals:
  - Find the antiderivative $F(x)$ of $f(x)$
  - We don't have to worry about the constant C here since it cancels out on the RHS
  - The results can be pout in square brackets: $\int_a^b f(x)dx = [F(x)]_a^b = F(b) - F(a)$
  - Your answer is a number