

Fundamental Theorem of Calculus Practice

Practice using the Fundamental Theorem of Calculus to solve the following or explain why it doesn't exist. DO NOT USE A CALCULATOR!!!

1) $\int_{-2}^2 3x^2 dx$

Answer: 16

2) $\int_0^{\pi} \sin x dx$

Answer: 2

3) $\int_{-2}^0 (3x^2 - x + 4) dx$

Answer: 18

4) $\int_0^{\pi/4} (\sec^2 x) dx$

Answer: 1

5) $\int_1^3 \left(\frac{2}{x}\right) dx$

Answer: $2 \ln 3$

6) $\int_{-1}^1 (x^2 + 1) dx$

Answer: $\frac{8}{3}$