

Quiz 10

June Weiland

December 2, 2022

Problem 1. Evaluate the following integrals using the fundamental theorem of calculus:

(a) $\int_1^2 (36x^3 + 9)dx,$

(b) $\int_{-\pi/3}^{\pi/3} (9 \tan x \cos x + 9)dx.$

Solution:

(a)

$$\int_1^2 (36x^3 + 9)dx = (9x^4 + 9x)|_1^2 = 144.$$

(b)

$$\int_{-\pi/3}^{\pi/3} (9 \tan x \cos x + 9)dx = \int_{-\pi/3}^{\pi/3} (9 \sin x + 9)dx = (-9 \cos x + 9x)|_{-\pi/3}^{\pi/3} = 6\pi.$$