

Section 5.4 Theorems about Definite Integrals (Part 1)

Properties of the Definite Integral

P 1. Compute $\int_{\pi}^{-\pi} \cos(x) dx$.

P 2. If $\int_{10}^{20} f(x) dx = 9$ and $\int_{20}^{13} f(x) dx = 4$ what is $\int_{10}^{13} f(x) dx$?

P 3. Compute $\int_1^2 f(x) dx$ and $\int_2^1 5g(x) + 3f(x) dx$ given that $\int_1^2 f(x) dx = 10$ and $\int_1^2 g(x) dx = 5$.

P 4. Find the area of the region bounded by $f(x) = x^3$ and $g(x) = x^2$ on $[0, 1]$.

P 5. Find the area of the region bounded between $f(x) = x^2 + x + 1$ and $g(x) = -x^2 + 3x + 1$.

P 6. What is the average value of the function $f(x) = 1 + x$ on the interval $[0, 2]$?