

MATH 1080, SPRING 2006, PRACTICE EXAM 3

1. Go over all HW problems in HW 8,9, and 10 with solution key posted on the website.
2. Memorize all definitions and formula/rules. Also go over the examples related to the graphs with area to understand the relation between the area and the definite integral.
3. Include the following problems together with examples in class and all HW problems in HW 8,9, and 10 for practice problems.

(1) Let $f(x) = 2x - 4$ on $[3, 5]$.

(a) Find \mathbf{RS}_n .

(b) Find $\lim_{n \rightarrow \infty} \mathbf{RS}_n$.

(c) Find $\int_3^5 f(x)dx$ by using the Fundamental Theorem of Calculus II.

(2) Find the followings:

(a) $\int_{-1}^1 (x^3 - x + 1)dx =$

(b) $\int_1^{e^2} \frac{2}{x} dx =$

(c) $\int_{\frac{1}{2}}^1 e^{2x-1} dx =$

(d) $\int_0^{\frac{\pi}{2}} 2 \cos x dx =$

(3) Find the area of the region surrounded by the following graph and the x -axis.

(a) $f(x) = -x^4 + 2x^3 - x^2$

(b) $f(x) = x^4 + x^3 - 2x^2$

(c) $f(x) = -x^3 + x^2 + x - 1$

(d) $f(x) = x^3 + 2x^2 - x - 2$

Good-luck!