

Mr. Staszko

Math 101A Chapter 4 Sample Test

Show your work in the spaces provided. 10 points each problem.

I. Given $\int_0^3 (x^2 + 4x + 3) dx$

1. Sketch the region and approximate its area using R_3 and L_3 .
2. Approximate its area using a) R_{300} and b) fnint. Write what you entered on the calculator.
3. Find the exact area using a Reimann sum where $n \rightarrow \infty$.
4. Find the exact area using the Fundamental Theorem of Integral Calculus.

II. Find the antiderivative of the following.

5. $\int (\sin x + e^x - 6\sqrt{x}) dx$

6. $\int x\sqrt{x^2 + 9} dx$

7. $\int x\sqrt{x+9} dx$

8. $\int \frac{5x^3 - 10x^2 + x}{5x^3} dx$

III. Evaluate: $\int_1^4 \frac{1}{\sqrt{x}(\sqrt{x} + 9)} dx$

IV. A share of STAZ Stock changed in selling price (p) over an 8 hour period according to the function, $p = -0.1t^3 + 1.2t^2 - 2.1t + 20$ where $t \in [0, 8]$. (Use technology to help in evaluations.)

1. Find the starting and ending selling price of the stock.
2. Find the maximum and minimum selling price of the stock.
3. Find the average selling price of the stock.