

DIRECTIONS To receive full credit, you must provide complete legible solutions to the following problems in the space provided. Transfer all your answers to the space provided on the test paper.

1. Express the limit as a definite integral on the given interval.

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n x_i \ln(2 + x_i^4) \Delta x_i, [3, 5]$$

Ans _____

2. Express the integral as a limit of Riemann sums. Do not evaluate the limit.
(Use the right endpoints of each subinterval as your sample points.)

$$\int_1^5 \frac{x}{1+x^4} dx$$

Ans _____

3. Express the integral as a limit of Riemann sums. Do not evaluate the limit.
(Use the Midpoint endpoints of each subinterval as your sample points.)

$$\int_0^1 \sqrt{1+x^3} dx$$

Ans _____

4. Evaluate the integral by interpreting it in terms of areas.

a. $\int_0^5 |x - 3| dx$

Ans _____

b. $\int_{-2}^0 (2 + \sqrt{4 - x^2}) dx$

Ans _____

5. Use the limit of a Riemann sum and a left end point evaluation to find the value of the integral.

$$\int_0^2 (4x^2 + 4x) dx$$

Ans _____