

Name _____

You have 18 minutes for this quiz – no calculators allowed.

1. (2 points) The area between the x -axis and the graph of $f(x) = \ln x$ on the interval $[3, 7]$ can be written as a limit. Fill in the missing information in this limit.

$$AREA = \lim_{n \rightarrow \infty} \sum_{k=1}^n \left[\quad \right]$$

2. (2 points) Evaluate the following limit.

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\frac{10k}{n^2} + \frac{3}{n} \right)$$

3. (2 points) Evaluate and simplify the following definite integral.

$$\int_1^2 (6x - 5) dx$$

4. (2 points) Evaluate the following indefinite integral.

$$\int (-4 + \tan^2 x) dx$$

5. (2 points) Suppose that f is integrable on the interval $[2, 9]$. Given that $\int_2^5 f(x) dx = 4$ and $\int_2^9 f(x) dx = 25$, evaluate the following definite integrals.

(a) $\int_5^9 f(x) dx$

(b) $\int_5^2 f(x) dx$