

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (3 points) Evaluate the following indefinite integral.

$$\int (10 + 3 \tan^2 x) dx$$

2. (3 points) Sal loves blueberries. At 9:00 AM, she started eating some at a rate of $\frac{480}{t}$ blueberries per minute, where t denotes the number of minutes since 9:00 AM. What is the total number of blueberries that Sal ate between 10:00 AM and 11:00 AM? Simplify your answer as much as possible without the use of a calculator.

3. (2 points) Fill in the missing information to show that the given definite integral can be expressed as the limit of a Riemann sum. The only variables appearing in your limit should be n and k . You do not need to evaluate this limit.

$$\int_{-3}^2 \frac{4}{7+x^2} dx = \lim_{n \rightarrow \infty} \sum_{k=1}^n \left[\quad \right]$$

4. (2 points) Suppose f is integrable on the interval $[1, 10]$. Given the following definite integrals, what is the value of $\int_3^6 f(x) dx$?

$$\begin{aligned} \int_1^6 f(x) dx &= 5 \\ \int_1^{10} f(x) dx &= 17 \\ \int_3^{10} f(x) dx &= 8 \end{aligned}$$