

Name \_\_\_\_\_

**RULES FOR THIS QUIZ:**

- No calculators are allowed.
- Circle each final answer.
- A correct answer will only be given full credit if enough work is shown to justify that answer.

1. (2 points) Write the following expression as the logarithm of a single quantity.

$$3 \ln(x) - 2 \ln(x + 1)$$

2. (4 points) Evaluate the following derivatives.

(a)  $D_x \left( \ln(\sqrt{5x - 7}) \right)$

(b)  $D_x \left( \frac{x^3}{\ln(x)} \right)$

3. (4 points) Evaluate the following integrals.

(a)  $\int \frac{-10}{x(\ln x)^3} dx$

(b)  $\int_0^1 \frac{6x}{x^2 + 1} dx$