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) \[ \int_{0}^{1} \frac{6x}{x^2 + 1} \, dx \]