$\frac{\mathbf{Math}\ \mathbf{172}\ \textbf{-}\ \mathbf{Quiz}\ \mathbf{9}}{\mathbf{November}\ \mathbf{1},\ 2017}$

Name _____ Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Integrate:
$$\int (x^2 + 8)e^{3x} dx$$

2. (4 points) Evaluate the definite integral:
$$\int_1^2 x^3 \ln x \, dx$$

3. (3 points) Integrate:
$$\int \sin^5 x \, \cos^3 x \, dx$$