Quiz 2A

Closed book/notes. No calculators allowed.

Name:

UAlbany Email: Solution

1. Compute the following derivative:

$$\frac{d}{dy}\left(\int_{e^{2y}}^{1} \ln(s^3)ds\right)$$

$$= -\frac{d}{dy}\left(\int_{1}^{e^{2y}} \ln(s^3)ds\right)$$

$$= -\frac{d}{dy}\left(e^{2y}\right) \cdot \ln\left((e^{2y})^3\right)$$

$$= -2e^{2y} \cdot \ln(e^{6y})$$

$$= -2e^{2y} \cdot 6y$$

$$= \boxed{-12ye^{2y}}$$

Rubric and Solution:

- +3 Points for switching the order of integration $\frac{d}{dy}\left(-\int_{1}^{e^{2y}} \ln(s^3)ds\right)$
- +3 Points for applying the chain rule to the term e^{2y}
- +4 Points for applying the FTC correctly to get $-2e^{2y}\ln(e^{6y})$

Grade: /10