MATH 142 (Section H01)
Prof. Meade

Quiz 1
September 4, 2014

University of South Carolina
Fall 2014

Name: Key
Section: H01

1. (5 points) Evaluate $\int_0^1 \frac{y}{e^{2y}}\,dy$.

2. (5 points) Evaluate $\int x^{3/2}\ln(x)\,dx$.

$u = \ln x \qquad dv = x^{3/2}\,dx$

$du = \frac{1}{x}\,dx \qquad v = \frac{2}{5}x^{5/2}$

$$= \frac{2}{5}x^{5/2}\ln x - \int \frac{1}{x}\cdot\frac{2}{5}x^{5/2}\,dx$$

$$= \frac{2}{5}x^{5/2}\ln x - \frac{2}{5}\int x^{3/2}\,dx$$

$$= \frac{2}{5}x^{5/2}\ln x - \frac{2}{5}\cdot\frac{2}{5}x^{5/2} + C$$

$$= \frac{2}{5}x^{5/2}\ln x - \frac{4}{25}x^{5/2} + C.$$