

Math 125, Winter 2016, Sections D and E, Answers to Midterm II,

1. (a) $2 \arcsin\left(\frac{x}{2}\right) - \frac{x\sqrt{4-x^2}}{2} + C$

(b) $\frac{3}{2}xe^{2x} - \frac{3}{4}e^{2x} + C$

2. (a) $8 \ln 2 - 5 \ln 3$

(b) Converges to $\frac{2}{e}$.

3. (a) $\int_1^4 \sqrt{1 + \left(\frac{1}{2}x^3 - \frac{1}{2}x^{-3}\right)^2},$

(b) $L = \frac{2055}{64}$

(c) $L \approx 32.11$

4. 10, 358, 400 ft. lbs.