

Answers

Spring 2014 Math 125 Final Exam

1. (a) $\frac{2}{3}(x+2)^{3/2} - 4(x+2)^{1/2} + C$

(b) $\frac{1}{6}\sec^3(e^{2x}) - \frac{1}{2}\sec(e^{2x}) + C$

2. (a) $\frac{3}{16} - \frac{1}{8}\ln 2$

(b) $\frac{\pi}{3} + \frac{\sqrt{3}}{2}$

3. $\frac{\pi}{2} + \ln(2 + \sqrt{3})$

4. $\left(\frac{3}{31}\right)^{1/3}$

5. $\frac{11}{4}$

6. 11,200 ft-lb

7. (b) $\frac{1}{3} \left(\frac{1}{1 + \frac{0}{16}} + \frac{4}{1 + \frac{1}{16}} + \frac{2}{1 + \frac{4}{16}} + \frac{4}{1 + \frac{9}{16}} + \frac{1}{1 + \frac{16}{16}} \right) = \frac{8011}{2550}$

8. $\frac{5\ln 2 - 3\ln 3}{2\ln 3 - 3\ln 2} = \frac{\ln(32/27)}{\ln(9/8)}$

9. $y = -\sqrt{5 - 4e^{-t/2}}$

10. $y = 350 - 350e^{-t/5}$