

Answers

Winter 2015 Math 125 Final Exam

1. (a) $\tan \theta + \frac{1}{3} \tan^3 \theta + C$
(b) $\frac{-2x - 13}{9\sqrt{x^2 + 4x + 13}} + C$
2. (a) $\frac{34}{15}$
(b) $8 \ln 3 - 5 \ln 5$
3. (a) $p < 0$
(b) $\frac{1}{p^2}$
4. $\sqrt{5}(\alpha + \beta)$
5. $\frac{94}{3}$
6. (a) $\int_{-a}^a 4b^2 \left(1 - \frac{x^2}{a^2}\right) dx$
(b) $\frac{16}{3}ab^2$
7. $\frac{3}{2} \left(\frac{1}{1 + (f(-2))^2} + \frac{2}{1 + (f(1))^2} + \frac{2}{1 + (f(4))^2} + \frac{1}{1 + (f(7))^2} \right)$
8. $\frac{e}{2e - 4}$
9. $y = \left(3e^{(2t + \sin 2t)/8} - 2\right)^2$
10. (a) $\frac{dy}{dt} = 10 - \frac{y}{10}$
(b) $y = 100 + 300e^{-t/10}$
(c) 100