Math 1042 **Test 2 Review – Even Answer Key** **Summer 2009**

Section 7.4

4. $I = \frac{1}{16}\tan^{-1}\left(\frac{x}{2}\right) + \frac{1}{16}\left(\frac{x}{\sqrt{x^2+4}}\right)\left(\frac{2}{\sqrt{x^2+4}}\right) + C = \frac{1}{16}\tan^{-1}\left(\frac{x}{2}\right) + \frac{x}{8(x^2+4)} + C$

6. $\frac{2\pi - 3\sqrt{3}}{24}$

Section 7.6

28. $x + \ln|x| - 3\ln|x+1| + C$ **30.** $2\ln|x-1| + \frac{1}{2}\ln|x^2+1| - 3\tan^{-1}x + C$

36. $\frac{1}{25}\ln|x| - \frac{1}{50}\ln|x^2+25| + C$

Section 7.7

36. $\frac{3}{4e^2}$ **42.** -1 **78.** $\frac{\pi}{2}$

Section 10.1

22. 1 **60.** ∞

Section 10.2

16. Diverges by divergence test **26.** $10 + \frac{5}{3} = \frac{35}{3}$ **28.** 4

Section 10.3

36. Diverges **38.** Converges

40. Converges by comparison with $\sum_{n=0}^{\infty} \frac{1}{n^{3/2}}$, for example. **52.** Converges (geometric series)

56. Diverges by Divergence Test