MA166: Recitation 6 Prep

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1 Recitation 6 Prep

Recitation average for Exam 1

Table 1.1 – Section averages for Exam 1.

section	average
294	71.0
151	76.66
112	69.82

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Section 1.1: Homework Solutions

Here are the homework solutions for this week.

Homework 12

Problem 1.1 (WebAssign, HW 12, # 1)**.** Evaluate the integral

$$\int_{3\sqrt{2}}^{6} \frac{1}{t^3\sqrt{t^2-9}}\,dt.$$

Solution. Make the substitution

$$3\sec\theta = t, \tag{1}$$

then $3\sec\theta\tan\theta\,d\theta = dt$ and substituting this and (1) into the integral, making sure to solve for the appropriate values of θ, i.e., the lower bound is $\sec^{-1}\left(\sqrt{2}\right) = \pi/4$ and the upper bound is $\sec^{-1}(2) = \pi/3$

$$\begin{aligned}\int_{3\sqrt{2}}^{6} \frac{1}{t^3\sqrt{t^2-9}}\,dt &= \int_{\pi/4}^{\pi/3} \frac{1}{\sec^3\theta\tan\theta} 3\sec\theta\tan\theta\,d\theta \\ &= 3\int_{\pi/4}^{\pi/3} \frac{\tan\theta}{\sec^2\theta}\,d\theta\end{aligned}$$

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Problem 1.2 (WebAssign, HW 12, # 2)**.** Evaluate the integral. (Use C for the constant of integration.)

$$\int \sqrt{1-25x^2}\,dx.$$

Solution. ☺

Problem 1.3 (WebAssign, HW 12, # 3)**.** Evaluate the integral. (Use C for the constant of integration.)

$$\int \sqrt{16+6x-x^2}\,dx.$$

Solution. ☺

Problem 1.4 (WebAssign, HW 12, # 4)**.** Evaluate the integral. (Use C for the constant of integration.)

$$\int \frac{1}{\sqrt{t^2 - 12t + 40}}\, dt.$$

Solution. ☺

Problem 1.5 (WebAssign, HW 12, # 5)**.** Evaluate the integral. (Use C for the constant of integration.)

$$\int \sqrt{x^2 + 6x}\, dx.$$

Solution. ☺

Homework 13

Problem 1.6 (WebAssign, HW 13, # 1)**.**

Solution. ☺

Problem 1.7 (WebAssign, HW 13, # 2)**.**

Solution. ☺

Problem 1.8 (WebAssign, HW 13, # 3)**.**

Solution. ☺

Problem 1.9 (WebAssign, HW 13, # 4)**.**

Solution. ☺

Problem 1.10 (WebAssign, HW 13, # 5)**.**

Solution. ☺

Problem 1.11 (WebAssign, HW 13, # 6)**.**

Solution. ☺

Homework 14

Problem 1.12 (WebAssign, HW 14, # 1)**.**

Solution. ☺

Problem 1.13 (WebAssign, HW 14, # 2)**.**

Solution. ☺

Problem 1.14 (WebAssign, HW 14, # 3)**.**

Solution. ☺

Problem 1.15 (WebAssign, HW 14, # 4)**.**

Solution. ☺

Problem 1.16 (WebAssign, HW 14, # 5)**.**

Solution. ☺

Section 1.2: Exam 2 Problems