Turn In Problems

Math 181D, Spring 2008

1.2 Week 1, Due Friday

    1. (4.8) Due Jan 25: Exercise 120 on page 305. [Use Exercise 119 for insight.]

2.1 Week 2, Due Tuesday

    1. (5.1) Due Jan 29: Exercise 22 on page 324.

    2. (5.2) Due Jan 29: Use Mathematical Induction to prove the Constant Multiple Rule for Finite Sums (Number 3 in the table on page 326).

2.2 Week 2, Due Friday, Feb 1

    1. (5.3) Exercise 77(b) on page 343. [Study the figure carefully for insight.]

3.1 Week 3, Due Tuesday, Feb 5

    1. (5.4) Exercise 74 on page 353. [Look up "indeterminate forms" in the index.]

    2. (5.5)

        (a) Explain why the substitution $x = \sin(t)$ will convert the integral $\int \sqrt{1 - x^2}\, dx$ into $\int \cos^2(t)\, dt$.

        (b) Explain why $\int \cos^2(t)\, dt$ does not equal $\frac{1}{3}\cos^3(t) + C$.

        (c) [Do not turn this part in] Use a trigonometric double angle formula to express $\cos^2(t)$ in terms of $\cos(2t)$ and then use that trigonometric identity to evaluate $\int \cos^2(t)\, dt$.

        (d) [Do not turn this part in] Express your answer from part c. in terms of the variable x.

3.2 Exam Week: DO NOT TURN IN

4.1 Week 4, Due Tuesday, Feb 12

    1. (5.6) Exercise 105 on page 369.

4.2 Week 4, Due Friday, February 15

    1. (6.1) Exercise 51.b on page 401.

    2. (6.2) Either Exercise 37 or 38 on page 408.

5.1 Week 5, Due Tuesday February 19

    1. (6.3) Exercise 34 on page 414.

    2. (6.4) Exercise 30 on page 420.

5.2 Week 5, Due Friday, February 22

1. (6.5) Exercise 40 on page 430.

6.1 Week 6, Due Tuesday, February 26

1. (Hypervolumes) Compute the 6-dimensional "volume" of the 6-dimensional set $B^6(r) = \{(x, y, z, u, v, w) : x^2 + y^2 + z^2 + u^2 + v^2 + w^2 \leq r^2\}$. Use the same technique we used to compute the volumes of $B^3(r)$, $B^4(r)$, and $B^5(r)$.

6.2 Week 6 (EXAM WEEK)

7.1 Week 7, Due Tuesday, March 4

1. (7.1) Exercise 49 on page 455.
2. (7.2) Do exercise 34 on page 460 twice:
   (a) Using the trigonometric identities in this section.
   (b) Using integration by parts twice.

7.2 Week 7, Due Friday, March 7

1. (7.3) Exercise 42 on page 464.

8.1 Week 8, Due Tuesday, March 11

1. (7.4) Exercise 27 on page 470.
2. (7.5) Exercise 54 on page 476.

8.2 Week 8, Due Friday, March 14

1. (7.6) Exercise 28 on page 486.

Spring Break Week March 17– 21

9.1 Week 9, Due Tuesday, March 25

    1. (7.7) Exercise 65.*b*. on page 495.(Just do part *b*.)

9.2 Week 9 **Exam Week – No Friday Homework**

10.1 Week 10, Due Tuesday, April 1

    1. (8.1) Exercise 91 on page 513.

10.2 Week 10, Due Friday, April 4

    1. (8.2) Exercise 64 on page 523.

11.1 Week 11, Due Tuesday, April 8

    1. (8.3) Exercise 33 on page 528
    2. (8.4) Exercise 36 on page 532

11.2 Week 11, Due Friday, April 11.

    1. (8.5) Exercise 43 on page 537

12.1 Week 12, Due Tuesday, April 15

    1. (8.6) Exercise 54 on page 543

12.2 Week 12 **Exam Week – No Friday Homework**

13.1 Week 13, Due Tuesday, April 22

    1. (8.7) Exercise 41 on page 552

13.2 Week 13, Due Friday, April 25

    1. (8.8) Exercise 29 on page 559

14.1 Week 14, Due Tuesday, April 29

    1. (8.9) Exercise 41 on page 567
    2. (8.10) Exercise 16 on page 572

14.2 Week 14, Due Friday, May 2

    1. (9.1) Number 47 on page 582
    2. (9.2) Number 19 on page 586

15.1 Week 15, Due Tuesday, May 6

    1. (9.3) Number 16 on page 590
    2. (9.4) Number 73 on page 599