MATH 1042: RECOMMENDED HOMEWORK PROBLEMS **Spring 2008**

Text: Hass, Weir, Thomas, *University Calculus*, Pearson Education, Inc., 2007

CHAPTER 5: INTEGRATION

5.1: 5, 7, 11, 12a (in Problem 12a, use the midpoint rule with 0.002 h time intervals)

5.2: 1, 2, 3, 5, 29, 32 (in 29 and 32, also evaluate each sum)

5.3: 1, 3, 6, 7, 9, 13–19 odd, 63, 65, 67

5.4: 1–25 odd, 28, 29, 31, 35, 41, 43, 44, 51, 53, 55, 57, 58, 75–78

5.5: 1, 3, 4, 5, 11, 13–21 odd, 23, 24, 25, 29, 38, 43, 49, 53, 59, 60, 65, 66

5.6: 1, 3, 7, 10, 11, 15, 25, 27, 31, 39, 47–49, 53–55, 58, 59, 63, 65, 67, 74, 75, 77, 85, 86, 95, 96

5.7: 1, 2, 3, 4, 5, 7, 9, 11, 13, 17, 25, 47, 49, 51

CHAPTER 6: APPLICATIONS OF DEFINITE INTEGRALS

6.1: 2, 3, 8, 13, 15, 17, 21, 23, 28, 29, 31, 35, 36, 37, 40, 41, 45, 46, 47

CHAPTER 7: TECHNIQUES OF INTEGRATION

7.1: 1, 3, 5 – 7, 10, 11, 13, 16, 20, 21, 23, 31

7.2: 1, 3, 7, 9, 11, 13, 17–27 odd, 29–31, 43

also evaluate the following integrals:

- (1) $\int \tan^3 x \, \sec^2 x \, dx$ (2) $\int \tan^2 \theta \, \sec^4 \theta \, d\theta$ (3) $\int \tan^3 x \, \sec^3 x \, dx$
- (4) $\int \sqrt{\cot x} \, \csc^4 x \, dx$ (5) $\int \cos^2 x \, \tan^3 x \, dx$ (6) $\int \dfrac{\tan^3 \theta}{\cos^4 \theta} \, d\theta$

7.3: 1–21 odd, 29, 37, 40, 41, 42

7.4: 9–17 odd, 20, 21, 23, 29, 31, 33, 35, 37, 41, 42, 45

7.7: 1, 3, 5, 7, 9, 13, 21, 24, 25, 35, 47, 48, 52, 55, 59, 67, 70, 71, 72a

CHAPTER 8: INFINITE SEQUENCES AND SERIES

8.1: 1, 3, 5, 23–25, 27–47 odd, 51, 53, 55, 60–62, 75, 76

8.2: 7, 10, 11, 14, 23–26, 29–35 odd, 39, 41, 43, 45, 47, 48

8.3: 1–3, 5, 6, 8, 9, 11, 18, 22, 23, 27, 28 (revisit 27 and 28 after you have covered the comparison test)

8.4: 1–8, 10, 11, 17, 19, 20, 22, 23, 27, 29

8.5: 1–5, 8, 9, 12, 14, 18, 19, 21, 23, 45

8.6: 1, 3, 5, 11–13, 27, 29, 35

8.7: 1–9 odd, 10, 11, 15–25 odd, 31, 32, (NOTE: In problems 1-32, do part *a* only), 41–43

8.8: 1–4, 5, 7, 9, 11, 13, 16, 21, 25, 27, 29

8.9: 1–4, 6–8, 11, 12, 15–17, 25, 26, 28 (in Problems 25, 26, 28 evaluate the **indefinite** integral as a power series in powers of x - as in Example 5 - and give the answer in summation notation), 35, 37