MATH 2043 RECOMMENDED HOMEWORK PROBLEMS Fall 2021

1. Text: **James Stewart**, *Calculus, Early Transcendentals,* **8**th Edition, Cengage Learning

2. *MATH 2043 ADDITIONAL Homework Problems* (consists of parts **A12, A13, A14, A15, and A16**)

Chapter12: VECTORS AND THE GEOMETRY OF SPACE

12.1: 9, 13, 15

12.2: 2, 3, 4, 6, 7, 9, 13, 15, 17, 19, 21, 23, 25, 26, 29, 43, 44, 47. Also do **A12: 1**

12.3: 1, 3, 5, 7, 9 (also find $\mathbf{a}\cdot(\mathbf{a}+2\mathbf{b})$), 11, 12 (in Problems 11 and 12, also find $\mathbf{u}\cdot(\mathbf{u}+2\mathbf{v}+3\mathbf{w})$), 17, 19, 22, 23

25, 26, 39, 41, 43, 64. Also do **A12: 2, 3, 4**.

12.4: 1, 3, 5, 13, 14, 15(in problems 14 and 15, find only $|\mathbf{u}\times\mathbf{v}|$), 17, 19, 27, 28, 29, 31, 43. Also do **A12: 5, 6**

12.5: 3, 4, 5, 6, 7, 9, 10, 11, 13, 15, 16, 17, 23, 25, 26, 27, 31, 33, 35, 45, 47, 48. Also do **A12: 7**

Chapter 13: VECTOR FUNCTIONS

13.1: 1, 7, 9

13.2: 3, 5, 7, 9, 11, 12, 13, 18, 19, 23, 25, 35, 38, 39, 40, 41, 42. Also do **A13: 1**

13.4: 3, 5, 11, 14, 15, 17a, 18a

13.3: 1- 6 (in problems 1, 2, 3, 5, and 6, also find the mass of a thin wire in the shape of the given curve if the density at t is $\rho(t)=t^2$), 14 (in problem 14, find only the length of the curve for $0\le t\le \ln 2$). Also do **A13: 2**

Chapter 14: PARTIAL DERIVATIVES

14.1: 9, 11, 13, 14, 15, 17, 47, 49

16.2: 1, 9, 11, 33, 34, 36 (in Problems 33, 34, 36, find only the mass of the wire). Also do **A16: 1**

14.3: 15, 16, 19-22, 25, 27, 31, 32, 33, 42, 43, 53, 55, 61, 63, 69

14.4: 3, 5, 11, 14, 15 (In 11-15, do not explain why the function is differentiable), 19, 20 (No graphing), 21. Also do **A14: 1, 2**

14.5: 1–11 odd, 21, 23, 25, 35

14.6: 7, 9, 11, 12, 15, 17, 20, 21, 23, 25, 26, 27b, 29, 31

Chapter 15: MULTIPLE INTEGRALS

15.1: 15-21 odd, 25, 29-33 odd, 37, 39. Also do **A15: 1**

15.2: 1, 2, 4, 5, 7, 8, 9, 13, 16, 17-27 odd, 45-53, 55, 56

15.3: 5-9, 11, 13, 14, 22, 24, 25, 29, 31

15.5: 2-9. Also solve **16.7**: 10-13

15.6: 3, 5, 6, 7, 9, 10, 11, 13, 15, 19, 21

15.7: 17, 19, 21, 22, 23, 25a, 29, 30. Also do **A15: 2**

15.8: 5, 6, 9a, 10a, 23, 25, 26, 27, 30 (in 23, 25, 26, 27 & 30, convert triple integrals into spherical coordinates but DONOT

evaluate integrals), 41 - 43. Also do **A15: 3, 4**

Chapter 16: VECTOR CALCULUS

16.1: 21, 23

16.2: 5, 7, 19, 20, 21, 22

16.3: 3, 5, 7, 11, 13, 14, 15, 17, 19. Also do **A16: 2, 3, 4**

16.4: 1, 2, 3, 6, 7, 9, 11, 13, 17

16.5: 3, 5, 7

16.7: 23, 26, 28

16.8: 2, 3, 7, 8, 11a, 12a, 13

16.9: 2, 5, 7, 8, 9, 11, 13