Problems from the Calculus Textbook

Stewart

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Chapter 12: Vectors and Geometry of Space

12.1: Three-Dimensional Coordinate Systems Utah #2AB; Problems: 5-6, 12, 15, 18, 39, 43.

12.2; Vectors Utah #3AB; Problems: 5, 14, 22, 25, 30, 35.

12.3: The Dot Product Utah #4AB; Problems: 6, 9, 15, 26, 42, 55.

12.4: The Cross Product Utah #5AB Problems: 4, 14, 16, 17, 35, 38.

12.5: Equations of Lines and Planes Utah #4C#7; Problems: 9, 15, 31, 45, 58, 72.

12.6: Cylinders and Quadic Surfaces Utah #8; Problems: 7, 21-28, 30, 35.

Chapter 13: Vector Functions

13.1: Vector Functions and Space Curves Utah #6; Problems: 5, 8, 17, 21-28, 42, 49.

13.2: Derivatives and Integrals of Vector Functions Utah #6 Problems: 3, 19, 22, 31, 36, 48.

13.3: Arclength and Curvature Problems: 1, 19, 31, 38, 43, 47.

13.4: Motion in Space: Velocity and Acceleration Problems: 1, 8, 10, 18, 22, 37.

Chapter 14: Partial Derivatives

14.1: Functions of Several Variables Utah #10; Problems: 7, 26, 32, 36, 61-66.

14.2: Limits and Continuity Utah #12AB; Problems: 5, 13, 30, 39, 40, 46.

14.3: Partial Derivatives Utah #11AB; Problems: 9, 26, 42, 63, 74, 78ac.

14.4: Tangent Planes and Linear Approximations Utah #13#16AB; Problems: 5, 23, 29, 33.

14.5: Chain Rule Utah #15; Problems: 6(Special Instructions), 16, 21, 32, 38, 49.

14.6: Directional Derivation and the Gradent Vector Utah #13; Problems: 9, 12, 32, 35, 41, 50.

14.7: Maximum and Minimum Values Utah #17AB Three Day Event

A Problems: 4, 6, 7

B Problems: 31, 44, 52.

C Problems: 5, 16, 49.

14.8: Lagrange Multiplers Utah #18AB Problems: 3, 7, 17, 44, Ex#1 x^2+y^2 given $3x+4y=5$, Ex#2 $2x^2-y^2+z$ given $x^2+y^2+z^2=1$ (6 Critical Points)

Chapter 15: Multiple Integrals

15.1 Double Integrals Over Rectangles Utah #19AB; Problems: 2, 6, 7, 9, 10, Prob#3T4

15.2 Double Integrals Over General Regions Utah #20; Problems: 17, 19, 25, 30, 52, 57

15.3 Double Integrals in Polar Coordinates Utah #21; Problems: 4, 5, 15, 25, 26, 30

15.4 Applications of Double Integrates Problems: 1, 9, 12, 16

15.5 Surface Area Utah #22AB; Problems: 1, 5, 10, 13 (give exact not approx answer)

15.6 Triple Integrals Utah #23; Problems: 13, 15, 18, 28, 33, 48ab

15.7 Triple Integrals in Cylindrical Coordinates Utah #9AB#19AB; Problems: 3, 9, 12, 22, 29

15.8 Triple Integrals in Spherical Coordinates Utah #9AB#19AB; Problems: 3, 7-8, 9, 14, 17, 26, 32ab 47.

15.9 Change of Variables in Multiple Integrals Utah #25; Problems: 2, 5 (and inverse (hint: $w=\sqrt{yz/x}$)), 10 (and inverse), 15, 23, 26 (and inverse).

Chapter 16: Vector Calculus

16.1 Vector Fields Utah #26; Problems: 8, 11-14, 15-18, 23, 24, 29-32

16.2 Line Integrals Utah #27AB; Problems: 7, 14, 16, 18, 19, 41.

16.3 The Fundamental Theorem for Line Integrals Utah #28; 4, 15, 23, 25, 30, 33.

16.4 Green's Theorem Utah #29; Problems: 2, 3, 7, 10, 13, 24.

16.5 Curl and Divergence Problems: 7, 11, 12, 17, 20, 26.

16.6 Parametric Surfaces and Their Areas Problems: 6, 13-18, 26, 33, 41, 45

16.7 Surface Integrals Utah #30; Problems 22, 23, 26, 29, 30, 31

16.8 Stokes's Theorem Utah #32; Problems 1, 2, 7, 15, 18, 19

16.9 The Divergence Theorem Utah #31; Problems 1, 6, 8, 11, 27

16.10 Do the true false quiz skipping # 6.

Utah Video URL

Utah Videos

Suggested Problems

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