

Key to Interactive Examples[†]
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for Math 252 at SDSU

Look for examples that are similar to your homework and examination problems.

Chapter 10. Parametric Equations and Polar Coordinates

<i>Stewart</i>	Topic	Interactive Examples
Section 10.1	Curves defined by parametric equations	Section 13.1: 1–6
Section 10.2	Calculus with parametric curves	Section 13.2: 1–4, 6–8
Section 10.3	Polar coordinates	Section 11.3: 1–5
Section 10.4	Areas and lengths in polar coordinates	
Section 10.5	Conic sections	Section 11.1: 1–6
Section 10.6	Conic sections in polar coordinates	

Chapter 12. Vectors and the geometry of space

<i>Stewart</i>	Topic	Interactive Examples
Section 12.1	Three-dimensional coordinate systems	
Section 12.2	Vectors	Section 12.1: 1, 2, 7, 9, 10 Section 12.3: 1, 2, 6
Section 12.3	The dot product	Section 12.1: 2–6, 8 Section 12.2: 1–5 Section 12.3: 3–5
Section 12.4	The cross product	Section 12.4: 1–8
Section 12.5	Equations of lines and planes	Section 12.5: 1–9
Section 12.6	Cylinders and quadratic surfaces	Section 14.1: 1, 2, 4
Section 12.7	Cylindrical and spherical coordinates	

[†]See the web site <http://www.math.ucsd.edu/~ashenk/>.

Chapter 13. Vector Functions

<i>Stewart</i>	Topic	Interactive Examples
Section 13.1	Vector functions and space curves	
Section 13.2	Derivatives and integrals of vector functions	
Section 13.3	Arc length and curvature	Section 13.2: 8
Section 13.4	Motion in space: velocity and acceleration	Section 13.3: 1–3

Chapter 14. Partial Derivatives

Section 14.1	Functions of several variables	Section 14.1: 3, 5–8 Section 14.6: 1
Section 14.2	Limits and continuity	Section 14.2: 1
Section 14.3	Partial derivatives	Section 14.2: 2–4 Section 14.6: 2, 3
Section 14.4	Tangent planes and linear approximations	Section 14.5: 1–6
Section 14.5	The Chain Rule	Section 14.3: 1–6
Section 14.6	Directional derivatives and the gradient vector	Section 14.4: 1, 3–6 Section 14.6: 4–6
Section 14.7	Maximum and minimum values	Section 15.1: 1–6 Section 15.2: 2, 3
Section 14.8	Lagrange multipliers	Section 15.3: 1–3

Chapter 15. Multiple Integrals

Stewart	Topic	Interactive Examples
Section 15.1	Double integrals over rectangles	Section 16.1: 1
Section 15.2	Iterated integrals	
Section 15.3	Double integrals over general regions	Section 16.1: 2–5
Section 15.4	Double integrals in polar coordinates	Section 16.3: 1, 2, 4
Section 15.5	Applications of double integrals	Section 16.2: 1–3 Section 16.3: 3
Section 15.6	Surface area	
Section 15.7	Triple integrals	
Section 15.8	Integrals in cylindrical and spherical coordinates	
Section 15.9	Change of variables in multiple integrals	

Chapter 16. Vector Calculus

Stewart	Topic	Interactive Examples
Section 16.1	Vector fields	Section 17.1: 1–3
Section 16.2	Line integrals	Section 17.2: 1–7
Section 16.3	The Fundamental Theorem for line integrals	Section 17.3: 1–3 Section 17.4: 1–8
Section 16.4	Green's Theorem	Section 17.5 : 1–3
Section 16.5	Curl and divergence	Section 17.5: 4–7 Section 17.7: 1–3
Section 16.6	Parametric surfaces and their areas	
Section 16.7	Surface integrals	Section 17.6: 1–2
Section 16.8	Stokes' Theorem	Section 17.7: 4
Section 16.9	The Divergence Theorem	