

Key to Interactive Examples[†]
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for Math 10C at UCSD

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

Chapter 8. Using the definite integral

<i>Hughes-Hallett</i>	Topic	Interactive Examples
Section 8.1	Areas and volumes	Section 7.3: 1, 2
Section 8.2	Applications to geometry	Section 7.2: 1–4 Section 7.5: 1
Section 8.3	Area and arc length in polar coordinates	Section 11.3: 1–5
Section 8.4	Density and center of mass	Section 7.8: 1–3
Section 8.5	Applications to physics	Section 7.9: 1–4
Section 8.6	Applications to economics	
Section 8.7	Distribution functions	
Section 8.8	Probability, mean, and median	

Chapter 9. Sequences and Series

<i>Hughes-Hallett</i>	Topic	Interactive Examples
Section 9.1	Sequences	Section 10.1: 1–5
Section 9.2	Geometric series	Section 10.2: 1–3
Section 9.3	Convergence of series	Section 10.3: 1–4
Section 9.4	Tests for convergence	Section 10.4: 1–5 Section 10.5: 1–5
Section 9.5	Power series and interval of convergence	Section 10.7: 1–4

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

Chapter 10. Approximating Functions Using Series

Hughes-Hallett	Topic	Interactive Examples
Section 10.1	Taylor polynomials	Section 10.6: 1–3, 4a
Section 10.2	Taylor series	
Section 10.3	Finding and using Taylor series	Section 10.7: 5–9
Section 10.4	The error in Taylor polynomial approximations	Section 10.6: 4b
Section 10.5	Fourier series	

Chapter 11. Differential Equations

Hughes-Hallett	Topic	Interactive Examples
Section 11.1	What is a differential equation?	
Section 11.2	Slope fields	Section 9.1: 4
Section 11.3	Euler's Method	Section 9.4: 1
Section 11.4	Separation of variables	Section 9.1: 1–3, 5, 6, 8
Section 11.5	Growth and decay	Section 3.4: 1–4
Section 11.6	Applications and modeling	
Section 11.7	Models of population growth	
Section 11.8	Systems of differential equations	
Section 11.9	Analyzing the phase plane	
Section 11.10	Second-order differential equations: oscillations	
Section 11.11	Linear second-order differential equations	Section 9.5: 1–4

Chapter 12. Functions of Several Variables

Hughes-Hallett	Topic	Interactive Examples
Section 12.1	Functions of two variables	
Section 12.2	Graphs of functions of two variables	Section 14.1: 1–4, 7
Section 12.3	Contour diagrams	Section 14.1: 5, 6, 8
Section 12.4	Linear functions	Section 14.5: 1, 2
Section 12.5	Functions of three variables	Section 14.6: 1
Section 12.6	Limits and continuity	Section 14.2: 1

Chapter 13. A Fundamental Tool: Vectors

Hughes-Hallett	Topic	Interactive Examples
Section 13.1	Displacement vectors	Section 12.1: 1, 2
Section 13.2	Vectors in general	
Section 13.3	The dot product	Section 12.2: 1 Section 12.5: 1–4
Section 13.4	The cross product	Section 12.4: 1–5

Chapter 14. Differentiating Functions of Several Variables

Hughes-Hallett	Topic	Interactive Examples
Section 14.1	The partial derivative	Section 14.2: 4, 5
Section 14.2	Computing partial derivatives algebraically	Section 14.2: 2, 3
Section 14.3	Local linearity and the differential	Section 14.5: 4–6
Section 14.4	Gradients and directional derivatives in the plane	Section 14.4: 1–6
Section 14.5	Gradients and directional derivatives in space	Section 14.6: 4, 5
Section 14.6	The Chain Rule	Section 14.3: 1–6
Section 14.7	Second-order partial derivatives	Section 15.2: 1
Section 14.8	Differentiability	