Key to Interactive Examples for Math 20B at UCSD

The statements and solutions of the Interactive Examples are on the web site http://www.math.ucsd.edu/∼ashenk/. To work on an example, select "Interactive Examples" and then the chapter, section, and example number. Work first the examples that are listed in bold type below. Then look for others that are similar to your homework and examination problems. If you need help with the site or have any questions about it, e-mail Al Shenk at ashenk@ucsd.edu.

Chapter 5. The Integral

Section 5.1	Approximating and computing area	
Section 5.2	The definite integral	Section 6.2: ***1–4, 6***
Section 5.3	The Fundamental Theorem of Calculus, Part I	Section 6.3: ***1–4*** Section 6.5: ***1–3*** Section 6.7: ***1–5***
Section 5.4	The Fundamental Theorem of Calculus, Part II	Section 6.4: ***1–4***
Section 5.5	Net or total change as the integral	Section 6.1: ***1–3*** Section 6.5: ***4*** Section 6.6: 1–3 Section 6.7: ***8, 9***
Section 5.6	Substitution method	Section 6.8: ***1–5***
Section 5.7	Further transcendental functions	Section 6.7: ***6, 7***
Section 5.8	Exponential growth and decay	Section 3.4: ***1–5***

Chapter 6. Applications of the Integral

Rogawski	**Topic**	**Interactive Examples**
Section 6.1	Area between Two Curves	Section 7.1: ***1, 2,*** 3 ***4, 5***
Section 6.2	Setting up Integrals: Volume, Density,	Section 7.3: ***1, 2*** Section 7.5: 1 Section 7.8: 1–3
	Average Value	Section 7.7: ***1–3***
Section 6.3	Volumes of revolution	Section 7.2: ***1–4***

Rogawski	**Topic**	**Interactive Examples**
Section 6.4	The method of cylindrical shells	Section 7.4: ***1,2***
Section 6.5	Work and energy	Section 7.9: ***1–4***

Chapter 11. Polar Coordinates

Rogawski	**Topic**	**Interactive Examples**
Section 11.3	Polar Coordinates	Section 11.3: ***1–5***

Chapter 7. Techniques of Integration

Rogawski	**Topic**	**Interactive Examples**
Section 7.1	Numerical Integration	Section 6.6: ***4***
Section 7.2	Integration by Parts	Section 8.1: ***1–4,*** 5
Section 7.3	Trigonometric Integrals	Section 8.2: ***1–2,*** 3
Section 7.4	Trigonometric substitution	Section 8.3: 1–4
Section 7.6	The Method of Partial Fractions	Section 8.4: ***1–4,*** 5
Section 7.7	Improper Integrals	Section 8.6: ***1–5***

Chapter 10. Infinite Series

Rogawski	**Topic**	**Interactive Examples**
Section 10.1	Sequences	Section 10.1: 1–5
Section 10.2	Summing an Infinite Series	Section 10.2: ***1–3***
Section 10.3	Convergence of Series with Positive Terms	Section 10.3: ***1–4***, 5 Section 10.4: ***1–5***
Section 10.4	Absolute and Conditional Convergence	Section 10.5: ***2, 3***
Section 10.5	The Ratio and Root Tests	Section 10.5: ***1, 4, 5***
Section 10.6	Power Series	Section 10.7: ***1–4***
Section 10.7	Taylor Series	Section 10.7: ***5–9***

Chapter 9. Differential Equations

Rogawski	**Topic**	**Interactive Examples**
Section 9.1	Solving Differential Equations	Section 9.1: ***1–3, 6, 8*** Section 9.2: 1–3
Section 9.2	Models Involving $y' = k(y - b)$	Section 9.1: ***5***
Section 9.3	Graphical and Numerical Methods	Section 9.1: 4 Section 9.4: 1