Review Problems (from the Textbook)

This is not an exhaustive list of all possible type of problems.
Answers and solutions to odd exercises are in the book and Student Solutions Manual, respectively.

Your exam preparations should include review of lecture notes, homework, and solving these review problems. After review, use the sample exam as a test of readiness. If you can not confidently, independently and quickly solve the sample exam problems correctly, you will not do well on the exam.

Section	Problems	Section	Problems
6.1	27, 37, 39	6.2*	31, 37, 63, 73
6.3*	27, 41, 71, 87, 89	6.4*	21, 39, 47, 49
6.6	11, 19, 27, 63, 65, 67, 69	6.8	19, 33, 47, 59, 77
Chap 6 Review	All three parts except problems involving sections 6.5 and 6.7.		
7.1	5, 9, 17, 21, 27, 33, 37	7.2	5, 9, 17, 23, 27, 29
7.3	5, 7, 15, 21, 25, 29	7.4	9, 15, 23, 25, 31, 39
7.5	9, 13, 33, 51, 71	7.7	7(c), 21 (S_n & E_s only)
7.8	7, 13, 21, 31, 33		
Chap 7 Review	All three parts except Exercises 51-58, 69 and problem parts involving Midpoint and Trapezoidal rules.		
8.1	9, 13, 15, 35	8.2	9, 13, 15, 17
8.3	5, 7, 11		
Chap 8 Review	Both parts except Concept Check 4-10 and Exercises 5 and 13-23.		
11.1	15, 23, 41, 47, 73, 77	11.2	17, 29, 43, 53, 57
11.3	7, 13, 17, 21, 29	11.4	7, 19, 23, 29, 31
11.5	3, 11, 17, 19, 25, 27	11.6	7, 15, 19, 27, 29, 39
11.7	3, 7, 17, 19, 27, 31	11.8	7, 11, 19, 25, 27
11.9	5, 15, 17, 25	11.10	13, 25, 27, 31, 55
11.11	5 & 7 (Don't graph), 13(a, b), 23, 27 (Don't graph)		
Chap 11 Review	All three parts corresponding to our course coverage, except Exercises 10, 57(b, d), 58(b, d) and 60(b).		
10.1	1, 9, 13, 19	10.2	7, 13, 33, 41, 61
10.3	5, 17, 25, 39, 55	10.4	9, 21, 23, 31
10.5	7, 15, 23, 27, 43		
Chap 10 Review	All three parts except problems involving section 10.6 and Exercises 19, 20, 27, 43 and 44.		

Calculus II
Math 1220
Sample Exam II - 4 pages
Sections 7.1-7.5, 7.7, 7.8
Calculator Allowed: Scientific or Graphics - Open Course Textbook
No human, other inanimate or electronic aides (including CAS, like Mathematica).

The failure to follow the above policy will result in a zero score in this exam and may also include a failing grade in the course and other academic sanctions. The student code is available at https://www.weber.edu/ppm/Policies/6-22_StudentCode.html.

Name:_____

The point value of each problem is in the left-hand margin. You must show your work to receive any credit, except in problem 1. Work neatly.

(5) 1. True or False.

( ) (a) $\int_{-\infty}^{\infty} f(x)\,dx = \lim_{t\to\infty}\int_{-t}^{t} f(x)\,dx$ for every function f continuous on the interval $(-\infty, \infty)$.

( ) (b) $\int_{1}^{\infty} \frac{1}{x}\,dx$ is convergent.

( ) (c) $\int f(x)g'(x)\,dx = f(x)g'(x) + \int f'(x)g(x)\,dx$, for any pair of differentiable functions $f(x)$ and $g(x)$,

( ) (d) $\int \csc x\,dx = \ln|\csc x + \cot x| + C$

( ) (e) The error bound formula for the Simpson's Rule is $|E_s| \le \frac{K(b-a)^5}{180n^4}$, where $|f^{(4)}(x)| \le K$ for $a \le x \le b$.

(6) 2. Use the comparison theorem to show that the integral $\int_{0}^{\infty} \frac{1}{e^x+2}\,dx$ is convergent. Do not evaluate it.

(28) 3. Evaluate the following integrals.

(a) $\int \sin^{-1} x \, dx$

(b) $\int \sin^4 x \, dx$

(c) $\int_0^{\frac{\pi}{3}} \tan^3 x \, \sec^3 x \, dx$

(d) $\int \sin^2 x \, \cos^3 x \, dx$

(12) 4. Evaluate the following integrals.

(a) $\int \frac{x+1}{\sqrt{x^2+4}}\,dx$

(b) $\int \frac{-2x+4}{(x^2+1)(x-1)^2}\,dx$

(6) 5. Use the Simpson's Rule with $n = 6$ to approximate $\int_0^3 \frac{1}{x^3+1}\,dx$.

(12) 6. Determine whether each integral is convergent or divergent. Evaluate those that are convergent.

(a) $\int_0^1 \frac{1}{\sqrt{x}}\,dx$

(b) $\int_e^\infty \frac{\ln x}{x}\,dx$

(6) 7. Find the volume of the solid generated by revolving the curve $f(x) = \sqrt{1-\cos x}$, $x = 0$ to $x = \frac{\pi}{3}$, about the x-axis .