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 Final Exam - 5 pages

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.

(12) 1. True or False.

( ) (a) The series $\sum_{n=1}^{\infty} \frac{n}{n+1}$ converges.

( ) (b) The points $(-1,\ 1)$ in rectangular coordinates and $(\sqrt{2}\,, -\pi/4)$ in polar coordinates are the same point.

( ) (c) $\sin^{-1}(\sin \frac{3\pi}{4}) = \frac{3\pi}{4}$.

( ) (d) The sequence $a_n = \frac{n}{n+2}$ is monotone.

( ) (e) $\int \sec x\, dx = \tan x + C$.

( ) (f) It is possible for a region to have finite area but infinite perimeter.

(12) 2. Find the Indicated derivative.

(a) y', if $y = \frac{e^x \ln x}{e^x + \ln x}$

(b) $\dfrac{dy}{dx}$, if $y = (1-x)^{2x}$

(8) 3. Find the limit of the sequence $\left\{\frac{2^n}{n!}\right\}_{n=1}^{\infty}$, if it exists.

(8) 4. Identify the graph of $9x^2 + 4y^2 = 36$. Find all of the following that applies: foci, vertices, directrix, and asymptotes. Draw its graph.

(6) 5. Evaluate $\lim_{x \to (\frac{\pi}{2})^-} \frac{\sec x}{1 + \tan x}$.

(18) 6. Evaluate the following integrals.

(a) $\int \frac{1}{1-x^2}\,dx$

(b) $\int \sqrt{1-9x^2}\,dx$

(c) $\int_0^1 x\,\ln x\,dx$

(6) 7. Find the equation of the tangent line to the parametric curve $x = t^2 + 1$, $y = t^3 + 2t$ at $t = 1$.

(14) 8. Determine convergence or divergence of the following series. State the tests used and show your work.

(a) $\sum_{n=1}^{\infty} \left(\frac{2n+1}{3n-1}\right)^n$

(b) $\sum_{n=1}^{\infty} n\, e^{-n}$

(8) 9. Find the area of the surface generated by revolving the curve $y = 2\sqrt{x}$, $1 \leq x \leq 2$, about the x-axis.

(12) 10. Find the radius of convergence and the interval of convergence of the power series $\sum_{n=1}^{\infty} \frac{(-1)^n x^n}{n^2}$.

(6) 11. Draw the graph of the cardioid $r = 1 - \sin\theta$.