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 IV - 5 pages
Sections 11.8-11.11 and 10.1-10.3
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.

(4) 1. True or False.

( ) (a) If $x = f(t)$ and $y = g(t)$ are twice differentiable functions, then $\dfrac{d^2y}{dx^2} = \dfrac{\frac{d^2y}{dt^2}}{\frac{d^2x}{dt^2}}$.

( ) (b) The value of Taylor series of any infinitely many times differentiable function is equal to the value of that function, at every x value in the domain.

( ) (c) In polar coordinates ordered pairs $(1,\ 4\pi/3)$ and $(1,\ -2\pi/3)$ represent the same point in the plane.

( ) (d) The Cartesian equation of the parametric curve $x = 1 - t$, $y = t^2$ is $y = 1 - x^2$.

(6) 2. Use the MacLaurin series $\cos x = \sum_{n=0}^{\infty} \frac{(-1)^n}{(2n)!}\, x^{2n}$ to evaluate $\int \cos(x^2)\, dx$.

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

(10) 4. Use the definition of the Taylor series to find the Taylor series expansion of $f(x) = \sin x$ at $a = \frac{\pi}{2}$. You must write your answer using a summation.

(6) 5. Use the series $\dfrac{1}{1-x} = \displaystyle\sum_{n=0}^{\infty} x^n$, $-1 < x < 1$, to find a power series representation of $\ln(2+x)$, and its radius of convergence.

(5) 6. Find a Cartesian equation of the parametric curve $x = 1 + \sin t$, $y = \cos t$ and identify its graph. Note: Do not draw its graph.

(10) 7. Find the area of surface generate by revolving the curve $x = \cos t$, $y = 1 + \sin t$, $0 \leq t \leq \pi$, about the x-axis.

(6) 8. Find the equation of the tangent line to the cardioid $r = 2 - 2\sin\theta$ at $\theta = \frac{\pi}{6}$.

(6) 9. Sketch the curve with the polar equation $r = 1 + 2\sin\theta$. Use several points and symmetric properties, as needed. **Show your work.**