MATH 202 Final (4.9 - 8.2, 11.1 - 11.11) Review

1. Know how to find area of region using Riemann Sums.
2. Know the Fundamental Theorem of Calculus.
3. Know the properties of the definite integral.
4. Know the Midpoint rule.
5. Know the Comparison properties of the integral.
6. Know how to find the integral using substitution
7. Know how to determine the area between curves.
8. Know how to find the volume of a solid using the Disk method and Shell Method.
9. Know how to determine the average value of a function.
10. Know how to use integration by parts.
11. Know how to use trigonometric substitution.
12. Know how to use the method of partial fractions.
13. Know how to use trigonometric substitution.
14. Know how to use the method of partial fractions.
15. Know the Trapezoidal Rule and how to use it to approximate the definite integral.
16. Know the Midpoint Rule and how to use it to approximate the definite integral.
17. Know the Simpson's Rule and how to use it to approximate the definite integral.
18. Know the definition and how to evaluate an improper integral.

19. Know the formulas for Arc Length and Areas of a Surface of Revolution.

20. Know how to determine Arc Length and Areas of a Surface of Revolution.

21. Know how to determine the convergence/divergence of a sequence.

22. Know how to determine convergence/divergence of a series using sequence of partial sums, integral test, direct & limit comparison tests, alternating series test, ratio test, root test, geometric series test, p-series test.

23. Know how to determine if a series is conditionally or absolutely convergent.

24. Know the definition of a power series and how to differentiate and integrate it.

25. Know how to represent a function using a power series.

26. Know how to estimate the sum of an infinite series using the Integral Test, Alternating series test and the partial sum.

27. Know how to represent a function using a Taylor and Maclauren Series.

28. Know how to estimate the value of a definite integral using a Taylor representation of a function.

Example exercises: Quiz & Homework questions; Ch.5 Review, #1-5, 9 - 38, 43 - 46, 51, 55, 60; Ch.6 Review, #1 - 6 Ch.6 Review, #7 - 16, 23, 25, 27, 28, 30; Ch.7 Review, #1 - 9, 11-33, 40, Ch.8 Review, #1 - 4, 7, 8; Ch. 11 Review, #1 - 31, 32, 38 - 46, 47, 55, 56