

## Math 152 Topics

### Chapter 5: Integrals

- Approximating areas and distances using rectangles - §5.1
- The definite integral (net area) - §5.2
- Sigma notation - See appendix E
- Properties of the definite integral - §5.2
- Fundamental Theorem of Calculus (Part I & 2)- §5.3
- Indefinite Integrals/Antiderivatives (Don't forget the +C!) - §5.4
- Net Change Theorem - §5.4
- The Substitution Method - §5.5
- Rationalizing substitutions - §7.4
- Overall strategy for integration - §7.5
- Using tables - §7.6
- Trapezoidal Rule and Simpson's Rule - §7.7
- Improper Integrals - §7.8
- Comparison Tests - §7.8

### Chapter 6: Applications of Integration

- Areas between curves - §6.1
- Volumes using disks and washers - §6.2
- Volumes using cylindrical shells - §6.3
- Average value of a function §6.5

### Chapter 7: Techniques of Integration

- Integration by parts (LIATE) - §7.1
- Trig. integrals (Powers of sine, cosine, tangent, secant)- §7.2
- Trig. substitution ( $\sqrt{\pm x^2 \pm a^2}$ ) - §7.3
- Integrating rational functions using partial fraction decomposition (Cases I & II)- §7.4

### Chapter 8: Further Applications

- Arc length - §8.1

### Chapter 10: Polar Coordinates

- Describing points and curves in polar coordinates - §10.3
- Graphing polar curves - §10.3
- Slope of a tangent to a polar curve - §10.3
- Areas enclosed by polar curve - §10.4
- Arc length of a polar curve - §10.4

### Chapter 9: Differential Equations

- Modeling with differential equations - §9.1
- Solving separable equations - §9.3

---

**Make sure to review the assigned homework problems and old quizzes.** Taking each quiz again is a good idea. You can print out blank quizzes at the following site:

[www.shoreline.edu/janderson/Math152Files/Winter2009/quizzes.htm](http://www.shoreline.edu/janderson/Math152Files/Winter2009/quizzes.htm)

You can also find blank copies of the exams at the following site:

[www.shoreline.edu/janderson/Math152Files/Winter2009/exams.htm](http://www.shoreline.edu/janderson/Math152Files/Winter2009/exams.htm)

Make sure to **pace yourself** by starting to study at least a week ahead of time. For example, you can take one or two quizzes each day to help you identify topics that you need to study further.