## Math 120: Midterm 3 Review Mary Radcliffe

The midterm on December 9 covers Sections 4.7, 4.9, 5.1-5.5, 7.1-7.2, and 6.1-6.2. Below is a list of some practice problems for the topics on the midterm.

- Optimization:
  - area/perimeter: Sec. 4.7, problems 7, 8, 11, 13, 18-20, 30, 34-39, 65, 68
  - volume/surface area: Sec. 4.7, problems 12, 14-17, 41-42
  - functions/distance: Sec. 4.7, problems 5, 6, 21-24, 48-50, 55, 57
  - inscribed shapes: Sec. 4.7, problems 26-29, 31-33, 43
  - trig: Sec. 4.7, problems 40, 44, 53, 71-78
  - other: Sec. 4.7, problems 2-4, 9, 10, 45, 46, 56
- Basic antiderivatives and integrals: Sec. 4.9, problems 1-48; Sec. 5.3, problems 19-42; Sec. 5.4, problems 5-46
- Antiderivatives and position/displacement: Sec. 4.9, problems 59-64, 67-69, 74-79; Sec. 5.4, problems 59-62, 64
- Definite integrals via Riemann sums: Sec. 5.1, problems 21-27; Sec. 5.2, problems 17-30
- FTOC: Sec. 5.3, problems 2-18, 59-63
- Integration with u-substitution: Sec. 5.5, problems 1-72
- Area between curves: Sec. 6.1, problems 1, 2, 5-10, 13-16, 18, 19, 21-28; Sec. 7.1, problems 59, 60; Sec. 7.2, problems 57, 58
- Volume: Sec. 6.2, problems 1-30, 47-53
- Integration by parts: Sec. 7.1, problems 3-36, 47-54
- Trigonometric integrals: Sec. 7.2, problems 1-40, 44-49

For general review:

- Chapter 4 Review (page 358)
  - Concept Check: 11
  - True/False Quiz: 7, 18
  - Exercises: 50-56, 58, 65-74, 77, 79, 80, 85
- Chapter 5 Review (page 421)
  - Concept Check: 1, 2, 4, 6-9
  - True/False Quiz: 1-8, 11, 12, 14-18
  - Exercises: 2-6, 8, 9, 11-40, 45-50, 53, 55, 58, 59, 62, 63, 67, 70
- Chapter 6 Review (page 466)
  - Exercises: 1-3, 5-11, 16(a, b), 23, 24
- Chapter 7 Review (page 537)
  - Concept Check: 1, 2
  - Exercises: 1-4, 6, 7, 9, 10, 12, 16, 17, 20, 24, 26, 32, 38