

### Math 241 - Section C1H - Homework 9

Assigned: 3/18/08

Due: 3/26/08 at the start of class.

Notation: Exercise a.b.c stands for Exercise c from Section a.b.

Problems to hand in:

- (1) 6.1.2.
- (2) 6.1.9.
- (3) 6.1.21.
- (4) Determine

$$\iint_R f \, dA$$

where  $R = [-1, 1] \times [-1, 1]$  and

$$f(x, y) = \begin{cases} 0 & x^2 + y^2 > 1 \\ \sqrt{1 - x^2 - y^2} & x^2 + y^2 \leq 1. \end{cases}$$

- (5) 6.2.10.
- (6) 6.2.16.
- (7) 6.2.22.
- (8) 6.2.28.
- (9) 6.2.30.
- (10) 6.3.8.
- (11) 6.3.20.
- (12) 6.3.22.
- (13) Compute

$$\int_0^{\infty} \frac{e^{-t} - e^{-2t}}{t} \, dt.$$