This week on the problem set we concentrate on the concept of change of variables. Often the most difficult part of these problems will be the setup. Finding the correct change of variables is often difficult and there is no formulaic way to decide which one to use for a given integral. We also see spherical and cylindrical coordinates as a example of useful coordinate changes in three dimensions.

Homework: The first homework will be due on Friday 20 January, at 12pm, the *start* of the lecture. It will consist of questions:

14 (from problem set 1), 6 and 8

*Numbers in parentheses indicate the question has been taken from the textbook:

J. Rogawski, C. Adams, *Calculus, Multivariable*, 3rd Ed., W. H. Freeman & Company,

and refer to the section and question number in the textbook.

1. (Section 16.6) Questions 4, 13, 15, 18, 19, 21, 22, 31, 32, 34*, 38, 44*.
2. (Section 16.4) Questions 25, 29, 31, 37, 42, 43, 45, 48, 53, 57*.

*The questions marked with an asterisk are more difficult or are of a form that would not appear on an exam. Nonetheless they are worth thinking about as they often test understanding at a deeper conceptual level.