

This week on the problem set you will get practice thinking about potential functions and conservative vector fields as well as the basics of parametrised surfaces and surface integrals.

**Homework:** The second homework will be due on Friday 17 February, at 12pm, the *start* of the lecture. It will consist of questions:

17.2.24, 17.2.44 and 17.2.67

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

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

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

1. (Section 17.3) 1, 4, 5, 6, 9, 11, 12, 15, 16, 18, 23, 25, 28, 29, 31\*.

2. (Section 17.4) 2, 3, 5, 8, 9, 10, 13, 14, 15, 16.

\*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.