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.

*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 17.3) 1, 4, 5, 6, 11, 13, 14, 17, 18, 20, 25, 27, 30, 31, 35*. (Use the following translations $4^{\text{th}} \mapsto 3^{\text{rd}}$ editions: $11 \mapsto 9$, $13 \mapsto 11$, $14 \mapsto 12$, $17 \mapsto 15$, $18 \mapsto 16$, $20 \mapsto 18$, $25 \mapsto 23$, $27 \mapsto 25$, $30 \mapsto 28$, $31 \mapsto 29$, $35 \mapsto 31$ otherwise the questions are the same).

*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.