

Homework Set 4

DUE: MAR 2, 2020 (AT THE BEGINNING OF CLASS)

To be handed in:*Please write your solution to Problems 1 and 2 on a single sheet of paper!*

1. Compute the following definite integral of a vector-valued function:

$$\int_0^\pi \left(\frac{\cos t}{\sin t + 1} \mathbf{i} - t \mathbf{j} + te^t \mathbf{k} \right) dt$$

2. Find the domain and image of the following real-valued function:

$$f(x, y, z) = \sqrt{\frac{e^z}{x^2 + y^2 - 1}}$$

NOT to be handed in (but recommended for you to practice with):

3. Textbook (5th edition) Section 12.5, Exercises 1-5
4. Textbook (5th edition) Section 13.1, Exercises 19-24, 45-48