

Mathematics 1120H – Calculus II: Integrals and Series

TRENT UNIVERSITY, Winter 2020

Assignment #2

Integration Challenge

Due on Friday, 3 July.

Please submit your solutions using Blackboard's assignment module. If that fails, please email your solutions to the instructor (sbilaniuk@trentu.ca). Scans or photos of handwritten solutions are perfectly acceptable, so long as they are legible and in some common format. (Combined into a single pdf, for preference.)

Two of the three integrals below require substitution to work out, and two of the three integrals below require integration by parts to work out. Show all the major steps in your solutions.

1. Compute $\int \frac{e^{2x}}{\sqrt{e^x + 1}} dx$. [3]

2. Compute $\int_1^{e^{\pi/2}} \cos(\ln(x)) dx$. [4]

3. Compute $\int \frac{1}{(x^2 + 1)^3} dx$. [3]