

Mathematics 1120H – Calculus II: Integrals and Series

TRENT UNIVERSITY, Winter 2020

Quiz #1

Tuesday, 23 June.

Available on Blackboard from 12:01 a.m. on Tuesday, 23 June.

Due on Blackboard by 11:59 p.m. on Tuesday, 23 June.

Solutions will be posted on Thursday, 25 June.

Scans of photos of handwritten work are entirely acceptable so long as they are legible and in some common format; solutions submitted as a single pdf are preferred, if you can manage it. If you can't submit your solutions via Blackboard's Assignments module for some reason, please email them to the instructor at: sbilaniuk@trentu.ca

1. Compute $\int_{-1}^2 (3x^2 - 2x + 1) dx$ using the basic properties of the definite integral, the Fundamental Theorem of Calculus, and the Power Rule for integration. At each step in which you use one of these, indicate which. [2]

Consider the region whose lower boundary is the piece of the x -axis for which $0 \leq x \leq 4$ and whose upper boundary consists of $y = 2x$ for $0 \leq x \leq 1$, $y = x^2 - 4x + 5$ for $1 \leq x \leq 3$, and $y = -2x + 8$ for $3 \leq x \leq 4$.

2. Sketch this region. [1]
3. Find the area of this region. [2]