

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

ASSIGNMENT 2

MATHEMATICS 1001

WINTER 2023

Due: Monday, January 30th, 2023 at 11:59pm. See the Gradescope Handout for submission information.

Note: You should complete the WebAssign problem set “Indefinite Integrals by u -Substitution”, as well as Worksheet 1.2, before you work on this assignment.

1. Use u -substitution to evaluate the following indefinite integrals.

(a) $\int \left[x^3 \sin(x^4) - \frac{\cot\left(\frac{1}{x^4}\right)}{x^5} \right] dx$

(b) $\int x^7 \sqrt{x^2 - 3} dx$

(c) $\int \frac{20z^3 + 5z}{6z^4 + 3z^2 + 11} dz$

(d) $\int \frac{3x^5 + 10x^3 - 3x^2 - 12}{x^2 + 4} dx$