MEMORIAL UNIVERSITY OF NEWFOUNDLAND
DEPARTMENT OF MATHEMATICS AND STATISTICS

ASSIGNMENT 7   **MATHEMATICS 1001**   WINTER 2025

Due: Monday, March 25th at 11:59pm. See the Gradescope Handout for submission information.

> **Note:** You should complete the WeBWorK problem sets "Integrals by Partial Fractions' and "Trigonometric Integrals", as well as Worksheet 3.1 and 3.2, before you work on this assignment.

1. Use a partial fraction decomposition to evaluate each of the following.

   (a) $\displaystyle \int \frac{11 - 5x}{x^2 - 3x - 10}\, dx$

   (b) $\displaystyle \int \frac{13x^2 - 4x - 12}{4x^3 + 4x^2 + 16x + 16}\, dx$

2. Evaluate each of the following trigonometric integrals.

   (a) $\displaystyle \int \sin^6(x) \cos^5(x)\, dx$

   (b) $\displaystyle \int \cos^4(3x)\, dx$