

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

MIDTERM TEST **MATHEMATICS 1001-081** FEBRUARY 15TH, 2024

Name

MUN Number

[15] 1. Evaluate each of the following integrals.

(a) $\int \frac{\ln(x^2)}{\ln(x)} dx$

(b) $\int \frac{\ln^2(x)}{x} dx$

(c) $\int \frac{\ln(x)}{x^2} dx$

- [25] 2. Evaluate **FIVE** of the following integrals. (If you evaluate all six, only your best five will count towards your mark.)

(a) $\int \frac{4-x}{\sqrt{4-x^2}} dx$

(b) $\int x^7 \sec^2(x^4) dx$

(c) $\int \frac{1}{9x^2 - 6x + 17} dx$

$$(d) \int \frac{\cosh(x)}{\sinh(x)\sqrt{9\sinh^2(x) - 1}} dx$$

$$(e) \int x^2 \sin(3x) dx$$

$$(f) \int \frac{6x^3 + x^2 - 12x + 5}{2x + 3} dx$$