

MEMORIAL UNIVERSITY OF NEWFOUNDLAND  
DEPARTMENT OF MATHEMATICS AND STATISTICS

---

MIDTERM TEST      **MATHEMATICS 1001-081**      FEBRUARY 19TH, 2025

---

<b>Name</b>	<b>MUN Number</b>
-------------	-------------------

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

(a)     $\int \sqrt{4x}(13 - x^2) \, dx$

(b)     $\int \frac{1}{\sqrt{13 + 4x - x^2}} \, dx$

(c)     $\int \frac{4x}{\sqrt{13 - x^2}} \, dx$

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

(a)  $\int x^5 \cos(x^3) dx$

(b)  $\int \frac{\sin(3x) + 1}{\cos(3x)} dx$

(c)  $\int x^2 e^{7x} dx$

(d)  $\int \frac{1}{x[\ln^2(x) + 4]} dx$

(e)  $\int \arcsin(x) dx$

(f)  $\int \frac{6x^3 + x^2 - 2x - 8}{2x - 1} dx$