

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.1

Math 1001 Worksheet

WINTER 2024

For practice only. Not to be submitted.

1. Evaluate the following indefinite integrals.

(a) $\int 10(5x + 4)^8 dx$

(b) $\int e^{(6-\frac{x}{2})} dx$

(c) $\int \frac{t^5 + 3t^3 + \sqrt{t}}{9t^4} dt$

(d) $\int [\sec^2(4x - 1) + \sqrt{4x - 1}] dx$

(e) $\int \csc(\theta)[\csc(\theta) - \cot(\theta)] d\theta$

(f) $\int 4 \sin(-4x) \cos(-4x) dx$

(g) $\int \frac{(1 + \frac{1}{x})(1 + \frac{4}{x})}{3x} dx$

2. If $F(x) = \int (e^{\cos(x)} - x^3) dx$, find $F'(0)$.

3. If $\int g(x) dx = e^{\cos(x)} - x^3 + C$, find $g(x)$.