

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.2

Math 1001 Worksheet

WINTER 2024

For practice only. Not to be submitted.

1. Evaluate each indefinite integral using u -substitution.

(a) $\int x^2(1 - x^3)^6 dx$

(b) $\int \frac{t}{\sqrt[3]{4t^2 + 5}} dt$

(c) $\int \frac{e^x}{e^x + 3} dx$

(d) $\int \frac{1}{2} \cot^3(x) \csc^2(x) dx$

(e) $\int \theta \sin(4\theta^2) \cos(4\theta^2) d\theta$

(f) $\int \frac{\cot(\sqrt{x})}{\sqrt{x}} dx$

(g) $\int \frac{6x^2 - 2}{x^3 - x} dx$

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

(i) $\int e^{\cos^2(x)} \sin(x) \cos(x) dx$

(j) $\int \frac{1}{x\sqrt{\ln(x)}} dx$

(k) $\int (x - 2)\sqrt{5 - x} dx$

(l) $\int x^3(x^2 + 8)^4 dx$