MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 2.4 **Math 1000 Worksheet** FALL 2023

For practice only. Not to be submitted.

1. Use the Product Rule or the Quotient Rule to find the derivative of each function.

   (a) $y = (x^3 - 1)(x^4 + 3x^2 - x)$

   (b) $f(x) = (x + 1)(2x + 1)(3x + 1)$

   (c) $g(x) = \dfrac{ax^2 + b}{cx^2 - d}$ where a, b, c and d are constants

   (d) $f(x) = \dfrac{1}{x^2 + \frac{4}{x+4}}$

2. Prove the Quotient Rule.