MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

ASSIGNMENT 6 **MATHEMATICS 1001** WINTER 2024

Due: Monday, March 11th at 11:59pm. See the Gradescope Handout for submission information.

> **Note:** You should complete Worksheet 2.4 before you work on this assignment.

1. Consider the region between the curves $x + y^2 - 3 = 0$ and $y - x + 1 = 0$.

   (a) Sketch a graph of the region.

   (b) Find the area of the region by integrating with respect to x.

   (c) Find the area of the region by integrating with respect to y.

2. Find the area of the indicated region.

   (a) The region bounded by $y = x^2 - 4$ and $y = 4 - 3x^2$.

   (b) The region bounded by $y = \sqrt{x+1}$, $y = \ln(x)$, the x-axis, and the line $y = 1$.