MATA35 - Calculus II for Biological Sciences

Assignment 2

Due Date: **Saturday, February 8, sharply by 11:30 pm** via the Crowdmark electronic submission invitation.

This assignment is based on lecture material covered in Week 3 and Week 4, which corresponds to sections 10.4, 10.5, 9.1, 9.2, and 9.3 of the textbook. Do not use results outside of these sections or lecture material to answer the questions below.

You are allowed to discuss this assignment with your classmates, TAs and the instructor. However, your written solutions that you submit must be in accordance with the University of Toronto's Code of Behaviour on Academic Matters.

Solve all questions. Full credit is given only for solutions that are correct and complete.

(1) (15 points) Compute the determinant of each matrix. Determine if the matrix is invertible without computing the inverse.

(a) $A = \begin{bmatrix} -1 & 8 & 3 \\ -2 & 5 & -3 \\ 7 & -4 & 2 \end{bmatrix}$ (b) $B = \begin{bmatrix} 0 & 4 & 2 \\ -1 & 6 & 2 \\ -1 & 14 & 6 \end{bmatrix}$

$\begin{bmatrix} 0 & 1 & 0 & -1 & 0 \end{bmatrix}$