Dawson College: **Linear Algebra** (SCIENCE): 201-NYC-05-S7: Fall 2022: **Quiz 1** name: _____

Books, watches, notes or cell phones are **not** allowed. The **only** calculators allowed are the Sharp EL-531**. You **must** show all your work, the correct answer is worth 1 mark the remaining marks are given for the work.

Given the linear system

$$\begin{cases} x_1 + 2x_2 + \ \ x_3 + 3x_4 = 4 \\ 2x_1 + 3x_2 + 3x_3 + 4x_4 = 7 \\ -x_1 + \ \ x_2 - 4x_3 + 3x_4 = -1 \\ 3x_1 + 5x_2 + 4x_3 + 7x_4 = 11 \end{cases}$$

a. *(4 marks)* Apply Gauss-Jordan elimination on the augmented matrix of the above system.

b. *(2 marks)* Find the solution set of the above system.

c. *(2 marks)* Find a particular solution for which $x_1 = -4$, and $x_2 = 8$.

d. *(3 marks)* If the augmented matrix of the above system is the coefficient matrix of a homogeneous system, find its solution set.