1.5 Handwrite Practice

Handwrite your responses to 1. and 2. below and collate them into a PDF for submission into ASULearn.

1. For the system

$$2x_1 + 2x_2 + 4x_3 = 0$$
$$-4x_1 - 4x_2 - 8x_3 = 0$$
$$-3x_2 - 3x_3 = 0$$

   a) Write the augmented matrix.

   b) Show the elementary row operations (like $r_2' = -5r_1 + r_2$) to use the strict method of Gaussian elimination to put the matrix in row echelon form and provide the reduced matrix (stop at ref and don't scale the rows but do use replacement and row swapping!).

   c) Write the solutions and show work.

   d) If they aren't already so, write the solutions in parametric vector form.

   e) What is the geometry of the solution set (point, line, plane...)?

2. True/False: The effect of adding $\vec{p}$ to a line through the origin is a line that is parallel to $\vec{p}$.

   a) Handwrite the statement.

   b) Identify the statement as true or false.

   c) If this statement is false, provide a specific counterexample or give a reason it is false. If it is true, quote a phrase and page number from our book in support of the statement.