$\begin{array}{c} \text{Math 320 Linear Algebra} \\ \text{Assignment $\#$ 1} \end{array}$

- 1. For each of the following find all solutions to the system of equations by **both** i) elimination with back substitution and ii) elimination only.
 - (a)

$$\begin{cases} 3x + 5y + 2z = 36\\ 7x - 2y + 4z = 55\\ -6x + 3y + 2z = -31 \end{cases}$$

(b)

$$\begin{cases} 3x_1 + 2x_2 + 2x_3 = 6\\ 2x_1 - x_2 - 3x_3 = -10\\ 4x_1 + 5x_2 + 7x_3 = 22 \end{cases}$$

(c)

$$\begin{cases} 3x + 2y + 6z + w = -6\\ 2x - 3z + w = 8\\ x + 2y + 9z = 4 \end{cases}$$

2. Find the coefficients a, b and c so that the graph of $f(x) = ax^2 + bx + c$ passes through the points (1, 6), (-1, 16) and (2, 10). You may use any method you want.