Class 1

1. Write a program for Gauss Seidel algorithm.
2. Use this algorithm as a function and solve m simultaneous equations with n unknowns ($m < n$) to obtain basic solutions.
3. Check your program for the following examples and find the basic solutions. Consider the non-negativity constraint for all.
    a. $2x_1 + 3x_2 - 2x_3 - 7x_4 = 1,\ x_1 + x_2 + x_3 + 3x_4 = 6, x_1 - x_2 + x_3 + 5x_4 = 4.$
    b. $2x_1 + x_2 - x_3 = 2,\ 2x_1 - x_2 + 5x_3 = 6, 4x_1 + x_2 + x_3 = 6.$
    c. $x_1 - 3x_3 + 3x_4 = 6,\ x_2 - 8x_3 + 4x_4 = 4.$
    d. $5x_1 + 4x_2 + 2x_3 = .6,\ 7x_1 + 2x_2 + x_3 = .35.$
    e. $\frac{1}{2}x_1 + 2x_2 + x_3 = 24,\ x_1 + 2x_2 + 4x_3 = 60.$