Homework #06 Gaussian Elimination

1. **Use standard Gaussian elimination to solve the following linear systems**

a.
$$\begin{aligned} x_1 - 5x_2 + x_3 &= 7 \\ 10x_1 + 20x_3 &= 6 \\ 5x_1 - x_3 &= 4 \end{aligned}$$

b.
$$\begin{aligned} x_1 + x_2 - x_3 &= 1 \\ x_1 + x_2 + 4x_3 &= 2 \\ 2x_1 - x_2 + 2x_3 &= 3 \end{aligned}$$

c.
$$\begin{aligned} 2x_1 - 3x_2 + 2x_3 &= 5 \\ -4x_1 + 2x_2 - 6x_3 &= 14 \\ 2x_1 + 2x_2 + 4x_3 &= 8 \end{aligned}$$

d.
$$\begin{aligned} x_2 + x_3 &= 6 \\ x_1 - 2x_2 - x_3 &= 4 \\ x_1 - x_2 + x_3 &= 5 \end{aligned}$$

2. **Repeat 1 using Gaussian elimination with partial pivoting**
3. **Repeat 1 using Gaussian elimination with scaled partial pivoting**