

Problem 1. Describe all solutions of $A\mathbf{x} = \mathbf{b}$ in parametric vector form, where

$$A = \begin{pmatrix} 1 & 2 & 5 & 4 & -3 \\ 2 & 4 & 10 & 8 & -6 \\ 3 & 6 & 15 & 12 & -9 \end{pmatrix} \text{ and } \mathbf{b} = \begin{pmatrix} 2 \\ 4 \\ 6 \end{pmatrix}.$$