

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

$$(A \ \mathbf{b}) = \begin{pmatrix} 1 & 2 & 0 & 2 & 1 & 2 \\ 2 & 4 & 1 & 7 & 6 & 3 \\ 3 & 6 & -2 & 0 & -5 & 1 \end{pmatrix}.$$