1.4 Pop quiz on Lecture 4 material

1. Write the linear system
$$\begin{aligned} 3x_1 + x_2 &= 7, \\ -x_1 + 4x_2 &= 2 \end{aligned}$$
in the form $Ax = b$.

2. Let $A = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ and $b = \begin{pmatrix} 7 \\ 2 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$.

3. Let $A = \begin{pmatrix} 1 & 0 \\ 1 & 0 \end{pmatrix}$ and $b = \begin{pmatrix} 7 \\ 2 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$.

4. Let $A = \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$ and $b = \begin{pmatrix} 7 \\ 0 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$.

5. Let $A = \begin{pmatrix} 2 & -1 \\ 1 & 1 \end{pmatrix}$ and $b = \begin{pmatrix} 3 \\ 0 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$.

6. Let $A = \begin{pmatrix} 4 & -2 & 5 \\ 2 & -3 & -2 \\ 1 & -3 & 2 \end{pmatrix}$ and $b = \begin{pmatrix} 31 \\ 13 \\ 11 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$.