1.6 Pop quiz on Lecture 6 material

1. Let $A = \begin{pmatrix} 1 & 0 & 1 \\ 0 & 2 & 2 \\ 0 & 0 & 0 \end{pmatrix}$ and $b = \begin{pmatrix} -2 \\ 4 \\ 3 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$ and $\ker(A)$ and $\mathrm{im}(A)$.

2. Let $A = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ and $b = \begin{pmatrix} -2 \\ 4 \\ 15 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$ and $\ker(A)$ and $\mathrm{im}(A)$.

3. Let $A = \begin{pmatrix} 1 & 2 & 0 & 0 & 5 \\ 0 & 0 & 1 & 0 & 6 \\ 0 & 0 & 0 & 1 & 7 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ and $b = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$. Find (with proof) $\mathrm{Sol}(Ax = b)$ and $\ker(A)$ and $\mathrm{im}(A)$.

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

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

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