

1.4.1 (HW1.4#25) Find scalars c_1 , c_2 , and c_3 such that

$$\begin{bmatrix} -7 \\ -3 \\ 10 \end{bmatrix} = c_1 \begin{bmatrix} 4 \\ 5 \\ -6 \end{bmatrix} + c_2 \begin{bmatrix} -3 \\ -2 \\ 2 \end{bmatrix} + c_3 \begin{bmatrix} 1 \\ 5 \\ -3 \end{bmatrix}$$

1.4.2 (HW1.4#13) Is $\vec{\mathbf{u}} = \begin{bmatrix} 0 \\ 4 \\ 4 \end{bmatrix}$ in the plane spanned by the columns of $A = \begin{bmatrix} 3 & -5 \\ -2 & 6 \\ 1 & 1 \end{bmatrix}$?

Why or why not?

1.5.1 Write the solutions to $A\vec{\mathbf{x}} = \vec{\mathbf{b}}$ in parametric form, $\vec{\mathbf{x}} = \vec{\mathbf{x}}_p + s\vec{\mathbf{x}}_1 + t\vec{\mathbf{x}}_2 + \dots$. Here

$$A = \begin{bmatrix} 1 & 0 & 0 & 4 & 0 \\ 0 & 1 & 5 & 6 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix} \text{ and } \vec{\mathbf{b}} = \begin{bmatrix} 7 \\ 8 \\ 9 \end{bmatrix}.$$

1.5.2 Write a vector equation of the plane that passes through $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$, $\begin{bmatrix} 4 \\ 4 \\ 5 \end{bmatrix}$, and $\begin{bmatrix} 9 \\ 8 \\ 7 \end{bmatrix}$.

Remember Thursday Jan 29 is the first exam!