

Quiz 04

Linear Combinations

(20 points) Let $\mathbf{a}_1 = \begin{bmatrix} 1 \\ -2 \\ -5 \end{bmatrix}$, $\mathbf{a}_2 = \begin{bmatrix} 2 \\ 5 \\ 6 \end{bmatrix}$, and $\mathbf{b} = \begin{bmatrix} 7 \\ 4 \\ -3 \end{bmatrix}$. Determine whether \mathbf{b} can be generated (or written) as a linear combination of \mathbf{a}_1 and \mathbf{a}_2 . If so, determine the weights x_1 and x_2 such that

$$x_1\mathbf{a}_1 + x_2\mathbf{a}_2 = \mathbf{b}.$$

Please answer the question in complete sentences in a **clearly** prepared manuscript. (No credits for the answer without necessary explanation.)

Quiz 04

Special number: _____ Name: _____
Section Number: _____ PUID: _____