

Quiz 2

October 10, 2024

Task 1

Find a combination $x_1w_1 + x_2w_2 + x_3w_3$ that gives the zero vector:

$$w_1 = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \quad w_2 = \begin{bmatrix} 4 \\ 5 \\ 6 \end{bmatrix}, \quad w_3 = \begin{bmatrix} 7 \\ 8 \\ 9 \end{bmatrix}$$

Task 2

If the rank of a 5×3 matrix A is 3, what is $\text{rref}(A)$?

Task 3

For which values of the constants c and d is

$$\begin{bmatrix} 1 & 923 & 813 \\ 1 & 923 & 815 \\ c \\ d \end{bmatrix}$$

a linear combination of

$$\begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \end{bmatrix} \quad \text{and} \quad \begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \end{bmatrix} ?$$

