

MA 262 - Quiz 5 (Lessons 10–12)

1. Decide whether the vector \mathbf{b} is in the range of the linear transformation $\mathbf{x} \mapsto A\mathbf{x}$, where

$$\mathbf{b} = \begin{bmatrix} 2 \\ 2 \\ 5 \end{bmatrix}, \quad A = \begin{bmatrix} 1 & -3 \\ 1 & 1 \\ 2 & -2 \end{bmatrix}.$$

2. Compute the product:

$$\begin{bmatrix} 1 & 2 \\ -1 & 1 \\ 2 & 0 \end{bmatrix} \cdot \begin{bmatrix} -3 & 4 \\ 2 & 1 \end{bmatrix}$$