

Quiz 2

1. Determine whether or not the vector equation below has a solution. If it has a unique solution, find it. If it has infinitely many solutions express the solutions parametrically in terms of the free variable(s).

$$x \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} + y \begin{bmatrix} 0 \\ 3 \\ 2 \end{bmatrix} + z \begin{bmatrix} 2 \\ 11 \\ 8 \end{bmatrix} = \begin{bmatrix} -1 \\ 8 \\ 5 \end{bmatrix}$$

2. Suppose v_1, v_2 are two vectors in \mathbb{R}^2 , and b is another vector in \mathbb{R}^2 . Give an example of vectors v_1, v_2 , and b such that the vector equation $xv_1 + yv_2 = b$ has

(a) A unique solution.

(b) No solution.

(c) Infinitely many solutions.