Quiz 2

1. Is the vector $\mathbf{b} = \begin{bmatrix} 1 \\ 3 \\ -1 \end{bmatrix}$ in the subset of $\mathbb{R}^3$ spanned by the columns of A? Justify. (10 pts.)

$$A = \begin{bmatrix} 2 & 0 & 1 \\ 4 & 1 & 4 \\ 2 & 0 & 1 \end{bmatrix}$$

2. For what value of h is $\mathbf{b}$ in the plane spanned by $\mathbf{v}, \mathbf{w}$? (10 pts.)

$$\mathbf{v} = \begin{bmatrix} 1 \\ 3 \\ -1 \end{bmatrix}, \quad \mathbf{w} = \begin{bmatrix} -5 \\ -9 \\ 2 \end{bmatrix}, \quad \mathbf{b} = \begin{bmatrix} 4 \\ 0 \\ h \end{bmatrix}.$$