

Let $\mathbf{x}_1 = \begin{bmatrix} 1 \\ 2 \\ 2 \end{bmatrix}$, $\mathbf{x}_2 = \begin{bmatrix} 2 \\ 1 \\ -2 \end{bmatrix}$ be a basis of vector space W

Find the vector $\mathbf{w} \in W$ which is closest to vector $\mathbf{y} = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$

$$\mathbf{w} = \begin{bmatrix} 7/9 \\ 20/9 \\ 26/9 \end{bmatrix}$$