Quiz 9

For the problems below, use

$$W = \text{span}\left(\begin{bmatrix} 1 \\ -2 \\ 0 \end{bmatrix}, \begin{bmatrix} 3 \\ 1 \\ 0 \end{bmatrix} \right)$$

1. Find an orthogonal basis for W.

2. Find the projection of $x = \begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix}$ onto W.

3. Find a vector $w \in W$ and a vector $v \in W^{\perp}$ such that $x = w + v$.