

## 1 Exercise15-18

### 1.1 (15)

$W$  is not a vector space.

Choose a point  $\mathbf{v} = \begin{bmatrix} 0 \\ -1 \\ 0 \end{bmatrix} \in W$  by setting  $(a, b) = (0, 0)$ . In this case,  $2\mathbf{v} = \begin{bmatrix} 0 \\ -2 \\ 0 \end{bmatrix}$  is not in  $W$

### 1.2 (16)