Exercise 1. Check if the following set *W* is a linear subspace of *V* if:

a) $W = \{[0, y, z] \in R^3 : yz = 0\}, \quad V = R^3$.
b) $W = \{[x, y, z] \in R^3 : x + 3y = y - 2z = 0\}, \quad V = R^3$.

Exercise 2. The vectors $\{\underline{u}, \underline{v}, \underline{w}\}$ are linearly independent. Determine, using the definition, whether the vectors $\{\underline{v}, \underline{u} - \underline{v} + \underline{w}, \underline{u} - 2\underline{v} + 2\underline{w}\}$ are linearly independent.

Exercise 3. Determine, using the definition, whether the vectors: [1, 0,-1], [0, 1, 3], [-2, 3, 2] are linearly independent in R^3.

Exercise 4. Present the vector [1, 2, -5] as linear combination of vectors:
[1, 0,-2], [0, 1, 3], [- 1, 3, 2].