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

a) $W = \{[x, y, z] \in R^3 : xz = 0\},\ V = R^3.$

b) $W = \{[x, y, z] \in R^3 : 2x - y = 4y + z = 0\},\ V = R^3.$

Exercise 2. The vectors $\{\underline{u}, \underline{v}, \underline{w}\}$ are linearly independent. Determine, using the definition, whether the vectors $\{2\underline{u} + 4\underline{w}, \underline{u} - 3\underline{v}, 5\underline{v} + 2\underline{w}\}$ are linearly independent.

Exercise 3. Determine, using the definition, whether the vectors: [2, 4,-1], [1, 0, -2], [1, 5, 0] are linearly independent in R^3.

Exercise 4. Present the vector [4, -8, -7] as linear combination of vectors:
[2, 4,-1], [1, 0, -2], [1, 5, 0].