1. Write the vector $(-1, 2)$ as a linear combination of the vectors $v_1 = (2, 1)$ and $v_2 = (7, 3)$.

2. Does $(0, -1, 2)$ belong to $Span\{(1, 2, -3), (1, 1, -1)\}$?

3. Find $Span\{1, X, \ldots, X^n\}$ in $\mathbb{R}[X]$.

4. Show that $Span\{(1, -1, 0), (0, 1, -1)\}$ is the subspace in $\mathbb{R}^3$ consisting of all vectors $(\alpha, \beta, \gamma)$ such that $\alpha + \beta + \gamma = 0$.

5. Prove that $Span\{v_1, \ldots, v_n\} + Span\{u_1, \ldots, u_m\} = Span\{v_1, \ldots, v_n, u_1, \ldots, u_m\}$.

6. Determine whether $(3, 4)$ and $(1, -3)$ are linearly independent in $\mathbb{R}^2$.

7. Are $(1, -2, 1), (0, 1, -2)$ and $(1, 0, -3)$ linearly dependent in $\mathbb{R}^3$.

8. Show that $1, X, \ldots, X^n$ are linearly independent in $\mathbb{R}[X]$.

9. Prove that vectors $v_1, \ldots, v_n$ are linearly dependent if and only if one of them is a linear combination of the others.

10. Give an example of three linearly dependent vectors in $\mathbb{R}^3$ such that none of the three is a multiple of another.