5. Define "linear combination". Use complete sentences.

Let $v, v_1, \ldots, v_p$ be vectors in $\mathbb{R}^n$. The vector v is a linear combination of $v_1, \ldots, v_p$ if there exist numbers $c_1, \ldots, c_p$ with

$$v = \sum_{i=1}^{p} c_i v_i$$

6. Define "linearly independent". Use complete sentences.

Let $v_1, \ldots, v_p$ be vectors in $\mathbb{R}^n$. The vectors $v_1, \ldots, v_p$ are linearly independent if the only numbers $c_1, \ldots, c_p$ with $\sum_{i=1}^{p} c_i v_i = 0$ are $c_1 = c_2 = \cdots = c_p = 0$.

7. Define "linear transformation". Use complete sentences.

The function $T: \mathbb{R}^n \longrightarrow \mathbb{R}^m$ is a linear transformation if

a) $T(u+v) = T(u) + T(v)$ for all u and v in $\mathbb{R}^n$

b) $T(cu) = cT(u)$ for all $u \in \mathbb{R}^n$ and $c \in \mathbb{R}$.