**Vector**:- Any ordered n-tuple of numbers is called an n Vector

$$X = (x_1, x_2, \cdots x_n)$$

## Linear dependence of Vectors

A set of r n-vectors $X_1, X_2, \cdots X_r$ is said to be linearly dependent if there exist r scalars (numbers) $K_1, K_2, \cdots K_r$, not all zero, such that

$$K_1 X_1 + K_2 X_2 + \cdots + K_r X_r = 0$$

where, 0, denote the n vector whose components are all zero.

## Linear Independent set of Vectors

A set of r n Vectors $X_1, X_2, \cdots X_r$ is said to be linearly independent if every relation of the type

$$K_1 X_1 + K_2 X_2 + \cdots + K_r X_r = 0$$

implies $K_1 = K_2 = K_3 = \cdots = K_r = 0$