SubSpace :-

A subspace W of a vector space V is called a subspace of V if W is itself a vector space under the addition and scalar Multiplication.

THEOREM

If W is a set of one or more vectors from a vector space V, then W is a subspace of V if and only if the following conditions hold.

(a) If u and v are vectors in W then u + v in W.

(b) If K is any scalar and u is any vector in W, then Ku is in W.

Question1 Use Theorem to determined which of the following are subspace of R^3?

(a) all vectors of the form (a, 0, 0)

Solution

Let, $u = (u_1, 0, 0)$, $v = (v_1, 0, 0)$ be two space vector in R^3 and K is any scalar