4.Vs3: Threre exsist (d1,d2) ϵV s.t (a1,a2) + (d1,d2) = (a1,a2)

Or, (a1d1 , a2+d2 ) = (a1 , a2) => a1d1 = a1 => d1 = 1

Also, a2 + d2 = a2 => d2 = 0 hence (d1,d2) = (1,0) so (a1,a2) + (d1,d2) ≠ (a1 , a2) vs3 does not satisfy

For solution of b.

Here given two function are define by ve = {f ϵv : f(-x) = f(x) for all xϵI} and v0 = {f ϵv :f(-x) = -f(x) for all xϵ I}

First we show that ve and vo are subspace of vector space.

For even: Here ve ={ fϵv : f(-x) = f(x) for all x ϵ I}

Vss1: for all x ϵ I there exsist (-x) ϵ I s.t f(x) +f(-x) = f(x) – f(x) = 0 ϵve

VSS2: for all xϵ I x + x = 2x ϵ ve

VSS3: for all cϵ R => cx ϵve

For odd:Here vo = {fϵv :f(-x) = -f(x) for all xϵ I}

Vss1: for all x ϵ I there exsist (-x) ϵ I s.t f(x) +f(-x) = f(x) – f(x) = 0 ϵv0

Vss2: for 1 is odd number and 0 is odd from vss1 ,hence 1 + 0 = 1 sum of odd function is odd .

Vss3: for all cϵ R => cx ϵv0

Hence even and odd function are subspace of vector space.