MAT 204

Q1

a. A linear combination of two more vectors is the vector obtained by adding two or more vectors (with different directions) which are multipled by scalar values.

b. In theory of vector spaces, a set of vectors is said to be linearly dependent if at least one of the vectors in the set can be defined as a linear combination of the others ; if no vector in the set can be written in this way, then the vectors are said to be linearly independent.

Q3

1. Commutativity of Vector Addition

Where, x + y = y + x

1. Associativity of Vector Addition

Where, (x + y ) + z = x +(y + z)

1. Identity Element of Scalar Multiplication

Where, 1.x = x

1. Associativity of Scalar Multiplication

Where, α(βx)=(αβ)x

Q2

**ANSWER**

(a-9b+c/2)u +(a+7b-c/2)v+(-a-5b-c/2)w