**Vectors in **

A matrix with one column is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_

Vectors are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if and only if the corresponding entries are equal.

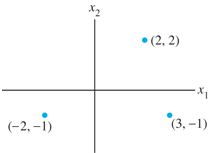
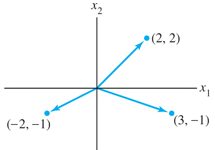
The sum of the vectors and is the vector \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

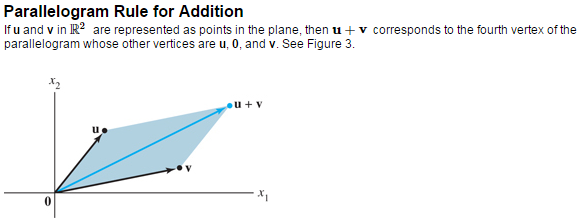
The scalar multiple of vector  by a real number *c* is the vector  where each \_\_\_\_\_\_\_\_\_\_\_ of is multiplied by *c.*

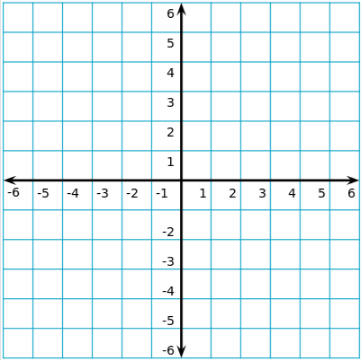
Given  and  find

1. 
2. 
3. 

Geometric Descriptions of ****

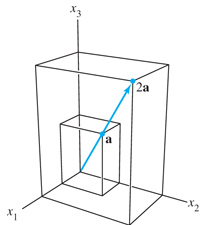
 



 Given  and , draw their vectors and the following.

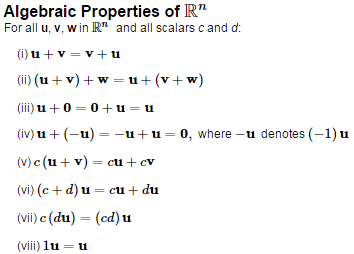
1. 
2. 

1. 

******Vectors in **

**Vectors in **

The Zero vector has entries of all zero, denoted by or



Prove (i)

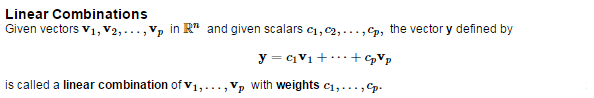
Claim: 

Proof.

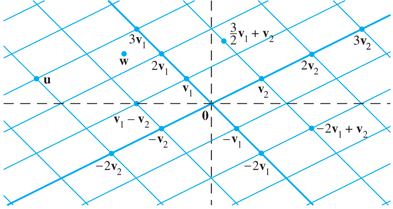
Let  be given.

Therefore .

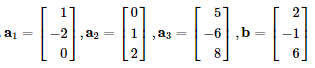
Prove (v)

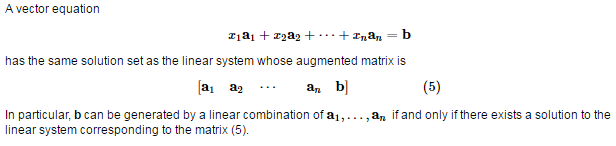


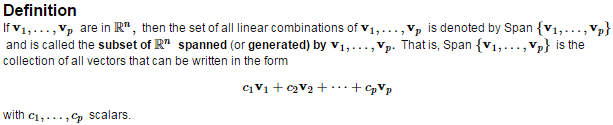
The figure identifies selected linear combinations of  and 



Determine whether  can be written as a linear combination of .



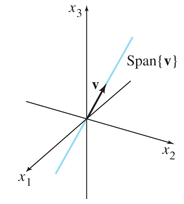
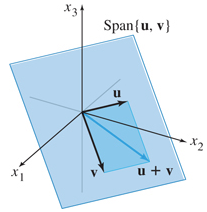




 means:

Every scalar multiple of individual vectors, 

Geometric Description of Span  and Span 

Let .  is a plane in .

Is **b** in that plane?



For what value(s) of *h* is **y** in the plane generated by **v**1 and **v**2?