Basis of a Vector Space and its Subspace  
 MCQ Questions

Q1. The intersection of subspaces is not a subspace. True/False

Q2. Which of the following is true about the Subspaces?

1. A subspace of a vector space is a non-empty subset
2. It is closed under addition
3. It is closed under scalar multiplication
4. All of the above

Q3. Which of the following is not true?

1. If V = **ℝ**2 over a real field, then the set of all the straight lines passing through the origin will form a subspace of V
2. The Euclidean space itself is a subspace
3. The set of all the points in a unit circle forms a subspace
4. All the options are correct

Q4. The set of vectors are called \_\_\_\_\_\_\_\_ if there are no non-trivial trivial   
 combination of these vectors equal to the zero vector.

1. Linearly Dependent
2. Linearly Independent
3. Linear Span
4. Basis

Q5. The number of elements in the basis of a vector space V over the field F is  
 called ‘Dimension’ of the basis. True/False

ANSWER KEY

Q1. False

Q2. All of the above

Q3. The set of all the points in a unit circle forms a subspace

Q4. Linearly Independent

Q5. True