Vector Spaces MCQ Questions

Q1. A set of all the non-zero real numbers forms a vector space.   
 True/False

Q2. Let V be a set over a field F, then V is closed under addition when:

1. u, v ϵ V ⇒ u – v ϵ V
2. u, v ϵ V ⇒ u/ v ϵ V
3. u, v ϵ V ⇒ u + v ϵ V
4. None of the above

Q3. What is the additive identity in any vector space?

1. 1
2. 0
3. ∞
4. Both 1 and 0

Q4. A set of natural numbers cannot form a vector space because

1. It is not closed under addition.
2. Additive identity does not exist
3. Inverse does not exist
4. Both b and c

Q5. Let V be a vector space over a real field and u, v ϵ V where u = (1, 2)  
 and v = (3, 6), then the vector v can be written as a linear combination of the  
 vector u.  
 True/False

ANSWER KEY

Q1. False

Q2. u, v ϵ V ⇒ u + v ϵ V

Q3. 1

Q4. Both b and c

Q5. True