Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Group\_\_\_\_\_\_\_\_\_\_

**Part I:** True (T) |False (F) questions.

1. \_\_\_\_\_ A vector space must have at least one element.
2. \_\_\_\_\_ A subset of a vector space is always a vector space.
3. \_\_\_\_\_ The set *A* = with ‘+’ and ‘.’ operations inherited from ℜ3 is vector space.
4. \_\_\_\_\_ The set *B* = is a subspace of ℜ3.
5. \_\_\_\_\_ The set *C* = is a subspace of ℜ.
6. \_\_\_\_\_ In a vector space, the span of any subset is a subspace

**Part II:** Answer the questions.

Given *D* = {1} with operations: 1+1 = 1 and r.1 = 1.

1. Is *D* a vector space? Please justify your answer.
2. Is *D* a subspace of ℜ1? Please justify your answer.