

Reading Assignment 3

Read Sect. 1.5

In the following questions, if I don't say anything assume every set mentioned in a question is contained in a vector space V .

1. What is the objective of this section? What type of sets are we looking for? In other words, why are we interested in linear independent sets?
2. According to the definition, what can you conclude if you are told that S is linearly dependent?
3. Before the definition, the authors explain the reasoning why "linearly dependent" is defined the way it is done in your book. What other way could have been used to define linearly dependent?
4. What would be the disadvantage(s) of defining S to be linearly dependent if S contains at least one vector that can be written as a linear combination of the other remaining elements?
5. What does it mean to say: " \vec{v} has a representation in terms of elements in S "?
6. What is the trivial representation of the zero vector? Make sure to always tell the reader everything necessary to understand your answer.
7. What can you say about S , if $0 \in S$?
8. What can you say about sets that contain linearly dependent sets?
9. How do you show that a set is linearly independent?
10. What can you say about subsets of a linearly independent set?

Practice Problems: Recall that some of the problems in the in-class exam will be taken from practice problems.

Section 1.5 # 1, 2(a)-2(g), 3, 4, 5