

Introduction to Subspaces

What you need to know already:

- ▶ Linear systems and their interpretation as description of straight objects.
- ▶ Vectors, matrices, determinants and their uses and operations.

What you can learn here:

- ▶ A key type of relationship among vectors that allows us to define new concepts and deepen our understanding of the linear structure of vectors.

In the last chapter, we focussed on certain subsets of Euclidean spaces because of their geometric property of being, in some sense, straight. It turns out that what makes them such is, in fact an algebraic property very much linked to the key idea of linear combinations.

In this chapter, we shall focus on that property and by doing so we will discover many new concepts and relations that are useful not only in their own right, but also because they can be generalized, extended and linked to other concepts and relations.

The ideal setting for a linear algebra development!

Exactly! It is an idea that will eventually bloom in the last Chapter, where we shall go beyond Euclidean vectors and generalize to abstract vectors, But that is far ahead, so for now, let's have a look and this different perspective on straight objects.

What questions do you have for your instructor?

