

Source: [KBe20math530refVectorSpace](#)

1 | Readings

- Axler 2.A
 - Under “Linear Independence”, what is the whole thing about subtracting equations and “if the only way to do this is the obvious way”? pg.32
 - Linear independence feels somewhat okay, but everything past linear dependence lost me.
 - Axler 2.C
 - Under example 2.41, near the end, why can’t $\dim U$ not equal 4? Why must you be able to expand it by at least one element?
 - Maybe because there are elements in $\mathcal{P}_m(\mathbb{R})$ that aren’t in U , so the basis of U must be a different length from the basis of V (else U would equal V and all elements of V would be in U by 2.39)
 - We can shove $f(x) = x$ into the basis of U and it will still be linearly independent (because f was not in U), so $\dim U$ must be less than 4.
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