

Exercise 5

Which of the following collections of 3-vectors $[a, b, c]$ are vector spaces? Provide reasons.

- (a) The vectors with $b = 0$.
- (b) The vectors with $b = 1$.
- (c) The vectors with $ab = 0$.
- (d) All the linear combinations of the two vectors $[1, 1, 0]$ and $[2, 0, 1]$.
- (e) All the vectors such that $c - a = 2b$.