Directions. Please submit your answer to the following problem in a \LaTeX-prepared document. Class participants are encouraged to prepare solutions in a collaborative mode but to prepare their to-be-submitted write-ups individually. The consequences of sharing files, electronic or otherwise, are discussed in the course syllabus.\(^1\)

Please include the problem number along with a statement of the problem in your submission. Please also include your e-mail address.

**Problem.** Prove that the intersection of any non-empty collection of subspaces of a vector space is a subspace.

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\(^1\)If the wording of this problem was discussed in detail in the classroom, the course instructor expects to see similar phrases and sentences in reading the submissions.