

Exercise 3 - Convex Sets

(7 Points) Exercise 2.12 in BV.

Hints:

- the exercise can be solved quite efficiently using the operations which preserve convexity (e.g. the intersection of half spaces is convex),
- the direct use of the definition of a convex set can sometimes lead to quite tedious calculations.
- if a set is (generally) not convex, then give a counterexample.

Exercise 4 - Supporting Hyperplane

(4 Points) Exercise 2.24 in BV

Exercise 5 - Polyhedral Approximation

(2 Points) Exercise 2.25 in BV