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Q2. Given linear program with 5 variables and  $m$  linear constraints.

Describe a simple polynomial time algo for solving a linear prog

We can use the simplex algo

We use  $\mathbb{R}^5$  space since we have 5 variables. Since the objective function is linear

Simplex starts in one corner of the shape created by the constraints in  $\mathbb{R}^5$  space. It iteratively moves to the next corner where the objective function is maxed/mined until it arrives at a corner where no neighbors improve the objective function, this is the optimal solution.

Simplex is polynomial time