

MASALAH PEMROGRAMAN LINEAR DENGAN KENDALA KUBUS

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ABSTRACT

Linear programming is one of the basic concepts to further study in applied mathematics and optimization. If the constraints of the linear programming problem form a convex region then the problem must have an optimal solution. Cube is convex and, in terms of geometry, a cube is very special. Cube has some special properties such as all of its edges are congruent and all of its sides are also congruent. Other special properties of the cube are related to orthogonality and parallelism. This study aims to discuss linear programming problems with cube constraints. Considering the peculiarities of a cube, this Linear Programming problem has an optimal solution and allows it to be solved by special steps as well. The results of the study obtained the following points: 1) A cube is a convex polyhedron; 2) the steps for solving Linear Programming with Cube Constraints are analogous to the steps for solving Linear Programming in two dimensions using the graphical method, finding all the vertices of the cube and calculating the value of the objective function at all of the vertices, and then determining the vertex point that produces the optimal value; 3) The problem can have a unique solution (vertex) or have infinitely many solutions (points along the edges or on the side planes of the cube).

Kata Kunci: *Linear programming problems, cube*