Step-1

Let us consider the following linear programming problem

Let x, y, and z units of Chevrolet, Buick and Cadillac are manufactured by General Motor to maximize the profit of

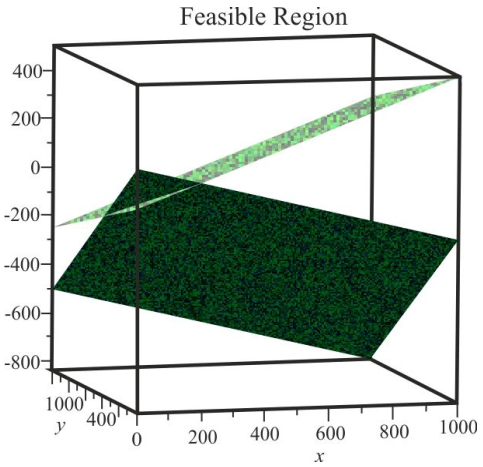
$$200x+300y+500z$$

The problem is subject to following constraints.

$$20x+17y+14z \geq 18(x+y+z)$$
$$x+2y+3z \leq 480$$
$$x, y, z \geq 0$$

Step-2

The required feasible region is a 3 dimensional plane satisfying the conditions.



Step-3

It is observed from the feasible region that, intersection of the two planes is a line containing only two variables.

Again the corner in which the given plane cuts the co-ordinate planes has the third variable as zero.

Thus, it is observed that there will be only two kinds of cars in the optimal solution of the given LPP problem.