The simplex method

Property of linear programs state that any point in the interior of the feasible region cannot be an optimal solution. The optimal solution is at the vertex or on an edge of the feasible region. Due aforementioned property, we can find the optimal solution by starting at some corner points which mostly start at (0, 0). By increasing a decision variable in the range of its constraints, the starting point gradually move to the next vertex and the value of the objective function improved by each move until it reach the max value which is the optimal solution. There are some cases that the starting point is not within the feasible region, so we'll use the 2-Phase method to move our default starting point to the vertex that within the feasible region. After we get the new starting point, we can perform the simplex method once again.

The simplex method is a useful method to find the optimal solution, but it'll be tough if the problem is more complex like having many of decision variables. It would be better to give this task for computer to calculate the solution since the simplex method is an iterative process to move from vertex to vertex. Computer also can perform this kind of task more precise and faster than human.