

Plineal

Linear programación with 2 variables , $Z=f(x,y)$.

It obtains the feasible region determined by the constraints (inequalities) introduced by the user and the vertexes corresponding to the maximum and/or minimum of the objective function (also introduced by the user) and a graph of this region. " Laying out ": (constraints an objective function) and the full exercise (laying out and results) can be saved , together or separately.

The screenshot shows the PLINEAL software interface. The title bar reads "PLINEAL: Linear programming with two variables (x,y)". The "Exercise" dropdown is set to "Selectivity Alacant, jun 1991" with code "1". The "Statement" text area contains the problem description: "A maker of airplanes produces 3 models: A, B and C in 2 factories. He should give to a client 12 airplanes weekly A, 8 B and 24 C. The operation of the first factory costs 2 million u/day (*) and that of the second 1.6 millions. The first factory produces in 1 day: 6 airplanes A, 2 B and 4 C and the second 2 A, 2 B and 12 C. How many days per week each factory should work to minimize the cost of operation of the factories? (*) u = monetary unit". The "Save" section has checkboxes for "Statement", "Laying out", and "Solved ex.". The "Result" section displays a table of vertices and their corresponding Z values:

vertex	Z	maximum / minimum
A) (7,0)	Z= 14	
B) (6,0)	Z= 12	
C) (3,1)	Z= 7.6	
D) (1,3)	Z= 6.8	<- Min.
E) (0,6)	Z= 9.6	
F) (0,7)	Z= 11.2	

Below the table is a graph showing the feasible region (shaded green) in the first quadrant. The objective function line is shown as a pink line with the equation $Z = 2x + 1.6y$. The "Laying out:" section shows the constraints: $y \geq 0$, $x \geq 0$, $x \leq 7$, $y \leq 7$, $3x + y \geq 6$, $x + y \geq 4$, and $x + 3y \geq 6$. The objective function is defined as $Z = Ax + By$ with $A = 2$ and $B = 1.6$, resulting in $Z = 2x + 1.6y$. A "Solve" button is at the bottom right.