

Systems of Simultaneous Inequalities & Linear Programming

Literacy

Solution Set
Feasible Region
Intersection
Polygonal Region
Vertices
Constraints
Bounded Region
Unbounded Region
Objective Function

Research

Read the examples and method of solving Linear Programming problems via:
<http://bit.ly/LinearProgramming>

Memory

Memorize the steps of solving a linear programming problem.

1. Define the variables
2. Write a system of inequalities
3. Graph the system
4. Determine the vertices of feasible region
5. Write the objective function
6. Test vertices in the objective function
7. Determine final answer

Skill

Solve each system by graphing.

$$\begin{aligned}y - x &> 6 \\ y + x &\leq -2\end{aligned}$$

$$\begin{aligned}y + 3x &\geq 6 \\ y - 2x &\leq 5\end{aligned}$$

$$\begin{aligned}y &\geq -4 \\ x &< 3\end{aligned}$$

$$\begin{aligned}x + y &\geq -3 \\ x - y &\geq 4 \\ y &\leq 3\end{aligned}$$

Stretch

A landscaping company has work crews that mow lawns and garden. Mowing jobs take 2 hours and gardening jobs take 3 hours. Each crew is scheduled for no more than 2 mowing jobs per day. The maximum number of hours for any crew's schedule must be less than or equal to 10 hours per day. The rate for mowing a lawn is \$40 per lawn and for gardening is \$50 per job. How many mowing jobs and how many gardening jobs should a crew do to maximize the revenue of the company?

Resources

Video: <http://bit.ly/LinearProgramming2>

Notes: <http://bit.ly/LinProgSlackmath>