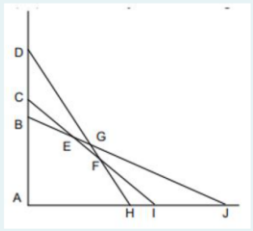
The following diagram shows the constraints for a LP model. Assume the point (0,0) satisfies constraint (B,J) but does not satisfy constraints (D,H) or (C,I).



Which set of points on this diagram defines the feasible solution space?

- a. F, G, I, J
- b. A, D, G, J
- c. G, E, F
- d. F, G, H, J

Why is it important to study the graphical method of solving LP problems?

- a. It is faster than computerized methods.
- b. To develop an understanding of the linear programming strategy,
- c. It provides better solutions than computerized methods
- d. Because lines are easy to draw on paper.

Clear my choice

Which of the following actions on applicable constraints would expand the feasible region of an LP model?

- a. Adding an additional constraint.
- b. Loosening the constraints.
- c. Tightening the constraints.
- d. Multiplying each constraint by 2.

Clear my choice

A company uses 8 pounds of resource 1 to make each unit of X_1 and 6 pounds of resource 1 to make each unit of X_2. There are only 300 pounds of resource 1 available. Which of the following constraints reflects the relationship between X_1, X_2 and resource 1?

- a. $8X_1 + 6X_2 \leq 300$
- b. $8X_1 + 6X_2 \geq 300$
- c. $8X_1 \leq 300$
- d. $8X_1 + 6X_2 = 300$

Clear my choice

The constraints $X_1 \geq 0$ and $X_2 \geq 0$ are referred to as

- a. positivity constraints.
- b. non-negativity conditions.
- c. optimality conditions.
- d. non-positivity constraints.

Clear my choice

The constraint for resource 1 is $5 X_1 + 4 X_2 \leq 200$. If $X_1 = 20$ and $X_2 = 15$, how much of resource 1 is unused?

- a. 50
- b. 40
- c. 200
- d. 140

The constraint for resource 1 is $6 X_1 + 3 X_2 = 300$. If $X_1 = 20$, what it the maximum value for X_2?

- a. 100
- b. 60
- c. 180
- d. 40

Clear my choice

The production manger is planning the production schedule for the next quarter and needs to decide how much of each of the 2 products, X_1 and X_2, to make. The company wants to maximize its profits.

X_1 = number of product 1 to make

X_2 = number of product 2 to make

MAX: $200 X_1 + 150 X_2$

Subject to: $3 X_1 + 6 X_2 \leq 300$ - resource 1

$3 X_1 + 7 X_2 \leq 175$ - resource 2

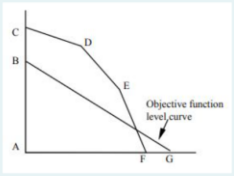
$X_1, X_2 \geq 0$

How many units of resource 1 are consumed by each unit of product 2 produced?

- a. 3
- b. 50
- c. 300
- d. 6

Clear my choice

This graph shows the feasible region (as defined by points ACDEF) and objective function level curve (BG) for a maximization problem. Which point corresponds to the optimal solution to the problem?



- a. D
- b. B
- c. E
- d. C
- e. A

Clear my choice