MATHS

BOOKS - CHHAYA PUBLICATION MATHS (BENGALI ENGLISH)

LINEAR PROGRAMMING GRAPHICAL METHOD

Example

1. A furniture manaufacturer makes two types of products chairs and tables form his available resorrces processing fo these products is done on two machines $M <_1$ and M_2 A chair requires 4 hours o machine M_1 and 2 hours on machine M_1 and 2 hour on machine M_2 there are 16 hoiurs

of time per day on mcachine M_1 and 10 hours per day on machine M_2 available respectively profits gained by the manufactyurer from a chari and a table are Rs 12 and Rs 9 respectively formulate the problem as a LPP in order to have the maximum profit

Watch Video Solution

2. A farmer purchases sheep and goats at Rs 150 sheep and Rs 20 per goat and sells them at a profit of Rs 15 per sheep and Rs 20 per goat the farmer does not have accommodation for more than 100 animals and cannot affortd to pay more than RTs 6000 he wishes to pruchase both kinds of animlas in order to have the maximum profit formulate the problem as LPP

Watch Video Solution

3. Solve the linear programming problem graphically

$2y - 1 \leq 0$

Watch Video Solution

4. Food F_1 contains 6 units of vitamin A per gram and 7 units of vitamin B per gram and cost 12 paise per gram food F_2 contains 8 untis of vitamin A per gram and 12 units of vitamin B per gram and cost 20 paise per gram the daily minimum requirement of vitamin A and B are 100 units and 120 units respectively formulate the problem as a linear programing problem to minimize the cost of such a mixture

Watch Video Solution

5. Solve the linear programming problem graphically

$x - 5y + 4 \geq 0$

Watch Video Solution

6. Solve the linear programming problem graphically

$5x - 3y < 10$

Watch Video Solution

7. Minimize Z=(3x+y)

Subject ot the constraints :

$2x + 3y < 6$

$x + y > 1,$

and $x > 0, y > 0$

Watch Video Solution

8. Draw the graph of the inequation $-2x - 3y > -12 (x, y > 0)$

Watch Video Solution

9. Show graphically that any point on the portion of the straight line 2x+3y =6 in the first quadrant is a feasible solution of the constraints $2x + 3y \geq 6, 2x + 3y \leq 6$ and $x, y > 0$

Watch Video Solution

10. Show geometrically that the set S= $\{(x, y) : x^2 + y^2 < 4\}$ is a convex set

Watch Video Solution

11. Show geometrically that intersection of two sets

$S_1 = \{(x, y) : x = 0, y < 0\}$ and

$S_2 = \{(x, y) : x > 0, y = 0 = 0\}$ is not a conves set

Watch Video Solution

12. Find the feasible region if any graphically for the constraints

$3x + 5y < 10$

$5x + 3y \leq 15$

and $x, y \geq 0$

Watch Video Solution

13. Make a graphical representation of the set of constraints in the following LPP

Maximize $Z = 3x + 2y$

subject of the constraints

$x > 4, y > 6$

$3x + 2y < 18$

and $x, y > 0$

Watch Video Solution

14. Find the feasible region if any graphically for the case :

$x + 2y < 4$

$x + 2y > 6$

and $x > 0, y > 0$

Watch Video Solution

15. Solve graphically:

Maximize Z= 3x+4y

subject of the constraints

$x - y > 0$

$-x + 3y < 3$

and $x, y > 0$

Watch Video Solution

16. Solve graphically :

Maximize Z=-4x+6y

Subject to the constraints

$-x + y < 3$

$-x + 3y < 15$

and $x, y > 0$

Watch Video Solution

17. Solve graphically (if possible) the following LPP:

Maximize Z= 2x+3y

Subject to the constaints :

$x + y > 1$

$2x + y < 0$

and $x, y > 0$

Watch Video Solution

18. Solve graphically the LPP given below:

Minimize Z= 3x+2y

Subject to the constraints :

$2x + y > 14$

$2x + 3y > 22$

$x + y > 5$

and $x, y > 0$

Watch Video Solution

19. A company manufactures two types of radios A and B A plant can operate for 48 hours per week for production prodcution of a radio A will require 2 hour and production

of a radio B wil require 3 hours Each radio A will contribute Rs 30 to profits while a radio B will contribute Rs 50 to profits the company has determined that a maximum of 15 A radios and 10 B radios can be sold each week

(i) Formulate a linear programming model to dete4rmine the optimum mixtrue of products of two types of radios that will maximize profit

(ii) solve the above problem using the corner point method

Watch Video Solution

20. A company owns mines, A produces 1 tonne of high grade ore 3 tones of medium grade ore and 5 tones of low grade ore each day , and mine B produces 2 tones of each of te three grades of ore each day the company needs f80 tones of high grade ore 160 tones of medium grade ore and

200 tones of low grade ore if it cost Rs 200 per day to work each mine using corner point method find the number of edays each mine has to be operated find the number of days each mine has to be operated for producing the required output with minimum total cost

Watch Video Solution

21. Solve the linear programming problem graphically

$3x + 4y \leq 12$

Watch Video Solution

Mcq

1. In an LPP the decision variables can take

A. any real values

B. integer values only

C. any non negative real values

D. non negative integer values only

Answer: C

Watch Video Solution

2. If the value of the objective function of an LPP can be increased or decreased indefinitely then the LPP is said to have

A. an unbounded solution

B. an infinite solution

C. a bounded solution

D. no solution

Answer: A

Watch Video Solution

3. An infeasible linear programming problems has

A. a unique solution

B. many solution

C. two distinct solutions

D. no solution

Answer: D

Watch Video Solution

4. An unbounded solution of a linear programming problem is a solution whose objective function is

A. zero

B. a large positive real number

C. a large negative real number

D. infinite

Answer: D

Watch Video Solution

5. The objective function of an LPP is

A. irrational function of decision variables

B. trigonometric function of decision variables

C. exponential function of decision variables

D. linear function of decision variables

Answer: D

Watch Video Solution

6. Given the LPP max Z=6x+10y subject to the constraints

$3x + 5y < 10, 5x + 3y < 15$

and x,y ≥ 0

The number of optimal solution of the LPP is

A. one

B. two

C. finite

D. infinite

Answer: A

Watch Video Solution

7. Any solution to a linear programming problem which satisfies the non negative restrictions of the problems is called

A. optimial solution

B. feasible solution

C. basic solution

D. none of these

Answer: B

 Watch Video Solution

8. The number of feasible solution (if exists) is

A. one

B. finite

C. infinite

D. none of these

Answer: C

Watch Video Solution

9. Which of the following is true in a linear programming problem ?

A. Min Z= max (-z)

B. Min Z= -Max Z

C. Min Z= Max (-Z)

D. none of these

Answer: A

Watch Video Solution

10. Given the LPP min Z=3x-y

Subject to the constraints

$2x + 3y > 1$

and $x, y > 0$

The optimal solution of the LPP is

A. x=0, y=$\frac{1}{2}$

B. x=0 ,y =$\frac{1}{3}$

C. $x = \frac{1}{3}, y = 0$

D. $x = \frac{1}{2}, y = 0$

Answer: B

Watch Video Solution

11. Given the LPP max Z=3x+4y

subject ot the constraints

$2x + 3y \leq 9$

$x - 5y \geq -20$

and $x, y > 0$

The LPP has

A. a unique optimal solution

B. alternative optimal solutions

C. an unbounded solution

D. none of these

Answer: C

Watch Video Solution

12. An unbounded feasible region

A. admits bounded feasible solution

B. admits unbounded solution

C. may admit bounded as well as unbounded feasible solutoin

D. none of these

Answer: C

 Watch Video Solution

13. Given the LPP Max z=x+y

Subject to the contraints

$x + 2y \leq 4$

$x + 2y > 6$

and $x, y \geq 0$

The given LPP has

A. uniquie feasible solution

B. infinite number of feasible solution

C. no feasible solution

D. none of these

Answer: C

Watch Video Solution

14. In a linear programming problem the equation $2x+3y=12$ in two unknows has number of solution equal to

A. a particular value of x and y

B. maximum value of x and minimum value of y

C. infinite

D. none of these

Answer: C

Watch Video Solution

15. State which of the following statement is false

A. the most important feature of a linear programming problem is the presence of linearity in the problem

B. the objective function may assume its optimal value at more them one corner point of the feasible region

C. multiple solutions of linear programming problem are solution each of which maximize or minimize the objective function

D. an infeasible linear programming problem has no feasible solution

Answer: C

Watch Video Solution

16. State which of the following statemetn is false

A. an unbounded solution of a linear programming problem is a solution whose objective functin is finite

B. any linear programming problem is either a problem of maiximization or a problem of minizmization

C. a problem of maximaization of the objective function z is nothing but a problem of minimization of the function z

D. an lpp may have a unboiunded solution

Answer: A

Watch Video Solution

17. State which of the following statement is true?

A. the constraints in a linear programming problem does not karise due to limitation of resources

B. the objective function of an lpp may be linear or nonlinear in decisions varibales

C. if one can get two optimal solution then one can obtain an infintie number of optimal solution

D. the constraints of a linear programming problem are not linear equation or inequalites arising out of practical limitations

Answer: C

Watch Video Solution

Watch Video Solution

18. State which of the following statement is true ?

A. if a linear programming has at least two optimal feasible solutoin then there are infinte number of optimal solution

B. in a linear programming problem the decision varibales can take any real values

C. in any problem it is possible to express both the objective function and the constraints in linear from

D. the objective function iof a linear programming problem with decision variables x and y is of the form ax + by +c where a,b and c are real constants

Answer: A

Watch Video Solution

19. State which of the following statement is false ?

A. the objective function of an lpp may assume its optimal value at more than one corner points of the feasible region

B. the feasible region of a linear programming problem is a convex set

C. $s = \{(x, y : x^2 + yy^2 \leq 4\}$ is a convex set

D. any solution to a general lpp which satisfies the non negative restrictions of the problem is called a

optimal solution

Answer: D

Watch Video Solution

20. State which of the following statement is false ?

A. the feasible region is the colllection of all feasible solutoin

B. given the lpp maximize : z=2x+3y subject to the constraints

$3x + y \leq 3$

and $x \geq 0, y \geq 0$

The maximum value of z is 19

C. Given the lpp mainimize z =5x -2y

subject to the constriants

$2x + 3y \geq 1$

and $x \geq 0, y \geq 0$

the minimum value of z is $\frac{2}{3}$

D. the collection of all feasible solution is called convex set

Answer: D

Watch Video Solution

Very Short Answer Type Question

1. Given the LPP max Z=2x+3y

Subject to the constraints

$3x + y \leq 3$

$x \geq 0, y \geq 0$

show that the corner points of the LPP are (0,0) ,(1,0) and (0,3)

Watch Video Solution

2. Find the optimal solution of the above LPP and the maximum value of Z

Watch Video Solution

3. What is linear programming ?

Watch Video Solution

4. Write down two advantages of an LPP

Watch Video Solution

5. State two limitation of an LPP

Watch Video Solution

6. Given the LPP Max Z= $3x_1 + 2x_2$ subject to the constraints

$2x_1 + x_2 \leq 2$

$3x_1 + 4x_2 \geq 12$

$x_1 \geq 0, x_2 \geq 0$

Draw the graphs of the constraints

Watch Video Solution

7. Show that the LPP (given in Question 6) has no feasible solution

Watch Video Solution

8. Find the corner points of the LPP Max Z= 2x+5y

Subject to the constaints

$0 \leq x \leq 4$

$0 \leq y \leq 3$

$x + y \leq 6$

Watch Video Solution

9. Find graphically the feasible region if any for the following inequation

$x \leq 2, y \leq 3, x + y \geq 1, x, y \geq 0$

Watch Video Solution

10. Find the corner points of the LPP max Z=x+2y

Subject ot the constraints

$3x + 5y \leq 10$

$5x + 3y \leq 15$

$x, y \geq 0$

Watch Video Solution

Short Answer Type Question

1. A furniture manufacturing company plans to make two prodcuts cvhairs and tables form its availabel resourcesof 400 board feet of mahogany lumber and 450 man hours A chair requires 5 board feet of lumber and 10 man hours and yields a profit of Rs 45 while each tabel uses 20 board feet of lumber adn 15man hours and a profit of Rs 80 formulate the problem as an LPP to maximize profit

$[1 board feet = 1/12$` cubic feet]

Watch Video Solution

2. Food F_1 contains 5 units of vitamin A and 6 units of vitamin B per gram and costs 20 p/gm food F_2 contains 8 units of vitamin A and 10 units of vitamin B per gram and cost 30 p/gm The daily requirements of A and B are at least 80 and 100 units respectively formulate the problem as a linear programming problem to minimize cost

Watch Video Solution

3. Solve the linear programming problem graphically

$3x - 7 \leq 5$

Watch Video Solution

4. Find the corner points of the feasible region of the linear programing problem

Max Z=x

Subject to the constraints

$3x + 2y \leq 12$

$2x + 3y \leq 13$

$x \geq 0, y \geq 0$

Watch Video Solution

5. Find the optimal solution of the above LPP and also find the value of $Z_{\max}$ from the graph of feasible region

Watch Video Solution

6. If we keep the contraints same as the problem (the LPP given in) and change the objective function as Max Z=y then show that $Z_{\max} = \frac{13}{3}$

Watch Video Solution

7. Solve the following linear programming problem graphically :

min Z= 5x+7y

Subject to the constraints

$3x + 2y \geq 12$

$2x + 3y \geq 13$

and $x \geq 0, y \geq 0$

Watch Video Solution

8. Solve the following linear programming problem :

Minimize $Z = 3x_1 + 5x_2$

Subject to the constraints

$x_1 + 3x_2 \geq 32$

$x_1 + x_2 \geq 2$

$x_1, x_2 \geq 0$

Watch Video Solution

9. Make a graphical representation of the set of constraints

in the following LPP

Max $Z = 2x_1 + x_2$

Subject to the contraints

$x_1 + 3x_2 \leq 15$

$3x_1 - 4x_2 \leq 12$

$x_1 \geq 0, x_2 \geq 0$

Find the corner points of the convex set of feasible solution.

Watch Video Solution

10. Solve the following linear programming problem graphically

Maximize Z= 60 x+15y

Subject to the constraints

$x + y \leq 50$

$3x + y \leq 90$

$x, y \geq 0$

Watch Video Solution

11. Given the LPP Max Z= 2x+3y

Subject to the constraints

$3x - y \leq -3$

$x - 2y \geq 2$

and $x \geq 0, y \geq 0$

Graphically show that the LPP has no feasible solution

Watch Video Solution

12. Solve the follwing LPP by the graphical method

Min Z= 32x+y

Subject to the constraints

$2x + y \geq 14$

$x - y \geq 4$

and $x \geq 0, y \geq 0$

Watch Video Solution

Long Answer Type Question

1. A company sells two different products P_1 and P_2 The company makes profits of Rs 40 and Rs 30 per unit on product P_1 and P_2 respectively. the two products are produced in a common production process and are sold in two different markets the production process has a capacity of 30000 men hours it takes 3 hours to produces one unit of P_1 and 1 hour to produce one unit of P_2 the market has been surveyed and company officals feels that the maximum number of P_(1) that can be sold is 8000 and maximum number that of P_2 is 12000 units. formulate the above problem and solve it by graphical method

Watch Video Solution

2. The final product of a firm has a requirement that it must weight at least 150 kg the two raw materials used in the manufacture of this product are A with a cost of Rs 2 per unit and B with a cost of Rs 8 per unit each unit of A weights 5 kg and each unit of B weighs 10 kg at least 14 units of B and not more than 20 units of A must be used what quantity of raw material of each type should be used for each unit of final product so as as to minimize cost ? pose the problem as an LPP and solve it by graphical method

Watch Video Solution

3. Make a graphical representation of the set of constraints in the following LPP

Maximimize Z= x+y

Subject to the constraints

$5x + 10y \leq 50$

$x + y \geq 1$

and $x \geq 0, y \geq 0$

show that the LPP has unique optimal solution

Watch Video Solution

4. Show by graphical method that the feasible region of the following LPP is unbounded but it has unique optimal solution x=3 ,y =18

Minimize Z=4x+2y

subject to the constraints

$3x + y \geq 27$

$-x - y \leq -21$

$x + 2y \geq 30$

and $x \geq 0, y \geq 0$

Watch Video Solution

5. Show graphically that the following LPP has an unbounded solution

Maximize Z= 3x+4Y

Subject to the constraints

$-2x + 3y \leq 9$

$x - 5y \geq -20$

and $x \geq 0, y \geq 0$

Watch Video Solution

6. Represent geometrically the following LPP

Minimize Z= 3x+2y

Subject to the constraits

$5x + y \geq 10$

$x + y \geq 6$

$x + 4y \geq 12$

and $x \geq 0, y \geq 0$

find out the exterme points of the convex set of feasible solution and hence find out the minimum value of the objective function

Watch Video Solution

7. Solving graphically show that the following LPP has an infinite number of optimal solution

Minimize Z= x+y

$5x + 9y \leq 45$

$x + y \geq 2$

$x \leq 4$

and $x \geq 0, y \geq 0$

Find also the minimum value of the object function Z

Watch Video Solution

8. A man has Rs 1500 to purchase rice and wheat. A bag of rice and a bag of wheat cost Rs 180 and Rs 120 respectively he has a storage capacity of 10 bags only . he earns a profit

of Rs 11 and Rs 8 per bag of rice and wheat respectively. how many bags of each must he buy to makes maximum profit

Watch Video Solution

9. A small firm manufactures item A and B. the total number of items that it can manufacture in a day is at the most 24 item. A takes one hour to make while item B takes only half an hour. the maximum time available per day is 16 hour. if the profit on one unit of item A be Rs 300 and that on one unit of item B be Rs 160. how many of each type of item should be produced to maximize the profit solve the problem graphically ?

Watch Video Solution

10. Kellogg is a new cereal formed of a mixture of bran and rice that constains at least 88 grams of protein and at least 36 milligrams of iron knlowing that bran contains 80 grams of protein and 40 milligrams of iron per kilogram and that rice contains 100 grams of protein and 30 milligrams of iron per kilogram if bran costs Rs 5 per kilogram and rice costs Rs 4 per kilogram

 Watch Video Solution

11. A company manufactures two types of toys A and B type A requires 5 munutes each fro cuttingh and 10 minutes each and 8 minutes each for assembling he earns a profit of Rs 50 each on type A and Rs 60 eachs on type B

 Watch Video Solution

12. Solve the linear programming problem graphically

$x + y \leq 3, x \geq 0, y \geq 0$

Watch Video Solution

13. A firm manufactures two types of products A and B and sells tehm at a profit of rs 5 per unit of type A and Rs 3 per unit to type B. One unti of type A requires one minute of process ign time on M_1 and two minutes of processing time on M_2 find out how many units of each type of procuct the firm should producve a day in order to maximize the profit solve the problem graphically

Watch Video Solution

14. Solve the linear programming problem graphically

$6x + 5y \leq 30$

Watch Video Solution

15. It is prescribed that the daily food ration for a patient must contains at least 100 units of vitamin A and 120 units of vitamin B two kinds of food F_1 and F_2 are avialable for him food F_2 contains 8 units of vitamin A and 12 units of vitamin

B per gram and costs 20 paise per gram it is desired to determine a minimum cost dietr for the patient formulate the problem as a linear programming problem and solve it graphically

Watch Video Solution

Watch Video Solution

16. A manufacturer produces two models A and B of a product each piece of model A requires 9 labour hours for fabricating and 1 labour hours for fabricating and 3 labour hour for for finishing for fabnricating and finishing the maximum labour hours available are 180 and 30 respectively the company makes a profit of Rs 8000 on each piece of model A and Rs 12000 on each piece of model B formulate a LPP so as to maxmize his profit per week and solve the problem graphically

Watch Video Solution

Multiple Correct Answers Type

1. A general linear programming problem is to maximize or minimize a function f= px +qy, $p^2 + q^2 \neq 0$ subject ot $(i)x \geq 0, y \geq 0, (ii)a_1x + b_1y \geq c_1, (iii)a_2x + b_2y \leq c_2$ etc then f and (i) (ii) , (iii) etc are defined as

A. objective function

B. non negativity constraints

C. negativity constraits

D. production function

Answer: A::B

Watch Video Solution

2. Let we have a system of linear inequations in two variables if the set of point (x,y) for which all the inequations of the system hold true then the system are either or

A. non empty

B. empty

C. feasible region

D. convex region

Answer: B::D

Watch Video Solution

3. Solution set of the inequality $x \geq 0$ is

A. half plane on the left of y axis

B. half plane on the right of y axis

C. half plane on lkthe left of y axis excluding the points on y axis

D. half plane on the right of y axis including the points on y axis

Answer: B::D

Watch Video Solution

4. If $X_1 = (x_1, y_1$ and (x_(2)=(x_(2),y_(2))` are two optimal solution of a L.P.P then

A. $\lambda x_1 + (1 - \lambda)x_2, \lambda \varepsilon R$ is also an optimal solution

B. $\lambda x_1 + (1-\lambda)x_2, 0 \leq 1$ is also an optimal solution

C. every L.P.P has an unique optimal solution

D. if an L.P.P has two optimal solutoins then it has infinitely many solution

Answer: B::D

Watch Video Solution

5. The corner points of the feasible region determnined by the following system of linear inequalities

A. 0,0

B. 5,0

C. 3,4

D. 0,5

Answer: C::D

View Text Solution

Integer Answer Type

1. By solving linear programming problem maximize Z=9x+3y subject to $2x + 3y \leq 13, 3x + y \leq 5$ and $x, y \geq 0$ using graphical method we get x =2,y=k and z=28 find the value of k

Watch Video Solution

2. Minimize z=18x+120y subject to $4x + y \geq 20, 2x + 3y \geq 0$ and $x, y \geq 0$ by graphical method

Watch Video Solution

3. Find the minimum value of $Z = 3x_1 + 5x_2$ subject to $x_1 + 3x_2 \geq 3, x_1 + x_2 \geq 2$ and $x_1, x_2 \geq 0$

Watch Video Solution

4. Find the maximum value of Z=x+y subject to $-2x + y \leq 1, x \leq 2, x + y \leq 3$ and $x, y \geq 0$

Watch Video Solution

5. For the minimum value of 3x+2y subject to constrains $5x + y \geq 10, x + y \geq 6, x + y \geq 12$ and $x \geq 0, y \geq 0$ we get x=2 and y=k find the value of k

Watch Video Solution

Matrix Match Type

1. Minimize and Maximize z=5x+2y subject to constrains $-2x - 3y \leq -6, x - 2y \leq 2, 3x + 2y \leq 12, -3x + 2y \leq 3$ and $x, y \geq 0$

Watch Video Solution

2. The minimum value of the objective function z=-50x+20y subject to constraits $2x - y \geq -5, 32x + y \geq 3$ $2x - 3y \leq 12$ and $x \geq 0, y \geq 0$

Watch Video Solution

Comprehension Type

1. The inequation representing the region bounded by $\triangle OBP$ are

A. $x \geq 2y, x \geq 0, x + y \leq 60$

B. $x + y \leq 60, x \geq 0, x \leq 2y$

C. $x + y \leq 60, x \geq 0, x \leq 2y$

D. none of these

Answer:

Watch Video Solution

2. The inequation s representing the region bounded by $\triangle BPQ$ are

A. $x + y \geq 60, x \leq 2y, x + 2y \leq 120$

B. $x + y \leq 60, x \leq 2y, x + 2y \leq 120$

C. $x + y \geq 60, x \geq 2y, x + 2y \leq 120$

D. none of these

Answer: A

Watch Video Solution

3. The inequations repesenting the region bounded by the quadrilateral AQPC are

A. $x \geq 0, y \geq 0, x \geq 2y, x + y \leq 60, x + 2y \leq 120$

B. $x \geq 0, x \leq 2, x + y \leq 60, x + 2y \leq 120$

C. $y \geq 0, x + y \geq 60, x + 2y \leq 120, x \geq 2y$

D. none of these

Answer: C

Watch Video Solution

4. The region shaded horizontally is represented by the inequations

A. $y \geq 0, 3x + 2y \geq 12, x + 2y \leq 8$

B. $y \geq 0, 3x + 2y \leq 12, x + 2y \leq 8$

C. $y \geq 0, 3x + 2y \leq 12, x + 2y \geq 8$

D. none of these

Answer: A

Watch Video Solution

5. The region shaded vertically is represented by the inequation

A. $x \geq 0, x + 2y \leq 8, 3x + 2y \geq 12$

B. $x \geq 0, x + 2y \leq 8, 3x + 2y \leq 12$

C. $x \geq 0, x + 2y \geq 8, 3x + 2y \leq 12$

D. none of these

Answer: C

Watch Video Solution

6. The inequalites

$x + 2y \leq 8, 3x + 2y \leq 12, x + y \leq 5x \geq 0, y \geq 0$

repersetn the region bounded by the quadrilateral OCEB which of the constraints is redundant

A. $x + 2y \leq 8$

B. $3x + 2y \leq 12$

C. $x + y \leq 5$

D. none of these

Answer: C

Watch Video Solution

Assertion Reason Type

1. Statement I : The common region determined by all the constraints of a LPP is called the feasible region

Statement II : A solution that also satisfies the non negativtiy restrications of a LPP is called the feasible soltion

A. Statement I is true Statement II is true , Statement II is a correct explanatio for Statement I

B. Statement I is true Statement II is true ,Statement II is not a correct expalnation for Statement I

C. Statement I is true Statement II is false

D. Statement I is false Statement II is true

Answer: A

Watch Video Solution

2. Statement I : If the open half plane represented $byax + by > M$ has no point common with the unbounded feasible regions then M is the maximum value of z otherwise z has no maximum value

Statement II : If the half plane $ax + by < m$ has no point common with the unbounded feasible region then m is the minimum value of z otherwise z has no minimum value

A. Statement I is true Statement II is true , Statement II is a correct explanation for Statement I

B. Statement I is ture Statemnet II is true , Statement II is not a correct explanation for Statement I

C. Statement I is true Statement II is false

D. Statement I is false , Statement II is true

Answer: B

Watch Video Solution