LINEAR PROGRAMMING

Assignment 4 Practice *by* O.P. GUPTA • M. +91-9650350480

Q01. The point which doesn't lie in the half plane $2x+3y-12\le 0$ is

(a) (1, 2) (b) (2, 1) (c) (2, 3) (d) (–3, 2)

Q02. The graph of the inequality $2x+3y>6$ is

(a) half plane that contains the origin

(b) half plane that neither contains the origin nor the points of the line $2x+3y=6$

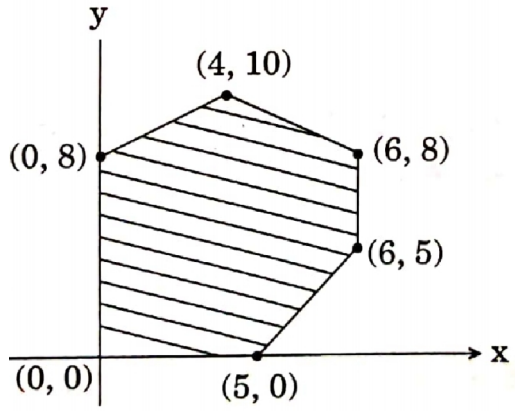
(c) whole XOY-plane excluding the points on the line $2x+3y=6$

(d) entire XOY-plane

Q03. In an LPP, if the objective function $z=ax+by$ has the same maximum value on two corner points of the feasible region, then the number of points at which z_{max} occurs is

(a) 0 (b) 2 (c) finite (d) infinite

Q04. The feasible region for an LPP is shown below :



Let $z=3x-4y$ be the objective function.

Minimum of z occurs at

(a) (0, 0) (b) (0, 8)

(c) (5, 0) (d) (4, 10)

Q05. The corner points of the feasible region of an LPP are (0, 0), (0, 8), (2, 7), (5, 4) and (6, 0). The maximum profit $P=3x+2y$ occurs at the point

(a) (0, 8) (b) (5, 4) (c) (2, 7) (d) (6, 0)

Q06. The corner points of the feasible region determined by the system of linear inequalities are $(0,0),(4,0),(2,4)$ and $(0,5)$. If the maximum value of $z=ax+by$, where $a,b>0$ occurs at both $(2,4)$ and $(4,0)$, then

(a) $a=2b$ (b) $2a=b$ (c) $a=b$ (d) $3a=b$

Q07. The objective function of an LPP is

(a) a constant (b) a linear function to be optimized

(c) an inequality (d) a quadratic expression

Q08. Solve the following LPP graphically :

To maximize : $Z=(100x+120y)$

Subject to constraints :

$x\ge 0,\ y\ge 0,$

$5x+8y\le 200,$

$10x+8y\le 240.$

Q09. Solve the following LPP graphically :

Minimise $z=5x+7y$

subject to the constraints $x,y\ge 0;$

$2x+y\ge 8,$

$x+2y\ge 10,$

Buy **MATHS Books for XII, XI & X** by O.P. GUPTA @ **Amazon / Flipkart** or **WhatsApp** @ +91-9650350480

Q10. Solve the following linear programming problem (L.P.P.) graphically.

Maximize $Z = x + 2y$.

Subject to constraints

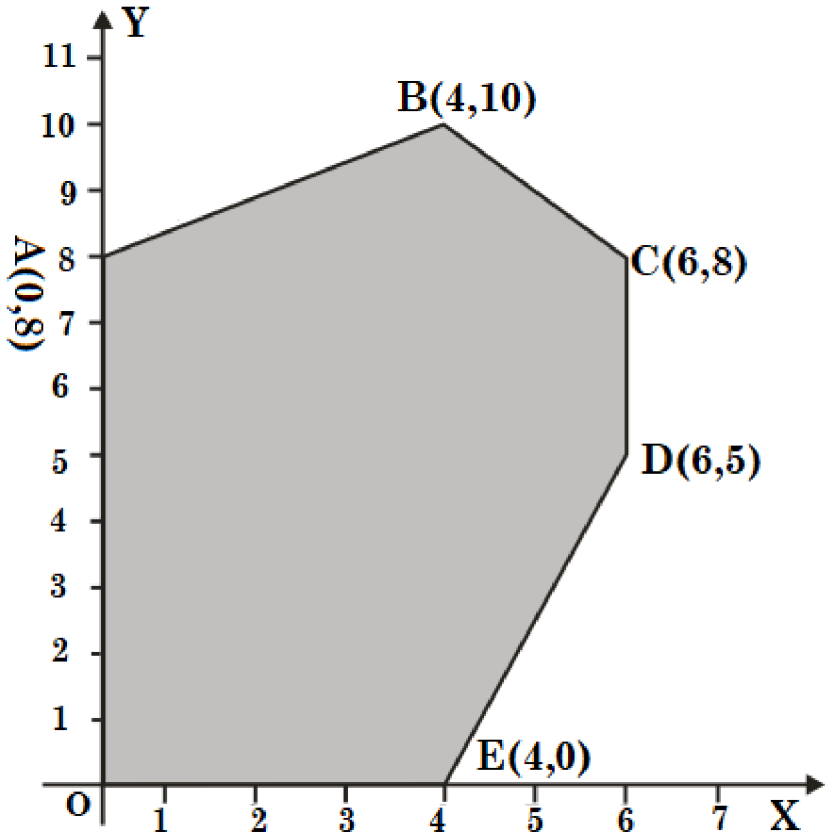
$x + 2y \geq 100,$

$2x - y \leq 0,$

$2x + y \leq 200;$

$x, y \geq 0.$

Q11. The corner points of the feasible region determined by the system of linear constraints are as shown below :



Answer each of the following :

(i) Let $Z = 3x - 4y$ be the objective function. Find the maximum and minimum value of Z and, also the corresponding points at which the maximum and minimum value occurs.

(ii) Let $Z = px + qy$, where $p, q > 0$ be the objective function. Find the condition on p and q so that the maximum value of Z occurs at $B(4, 10)$ and $C(6, 8)$. Also mention the number of optimal solutions in this case.

Q12. Solve the following linear programming problem graphically.

Maximize $Z = 3x + 9y$.

subject to constraints

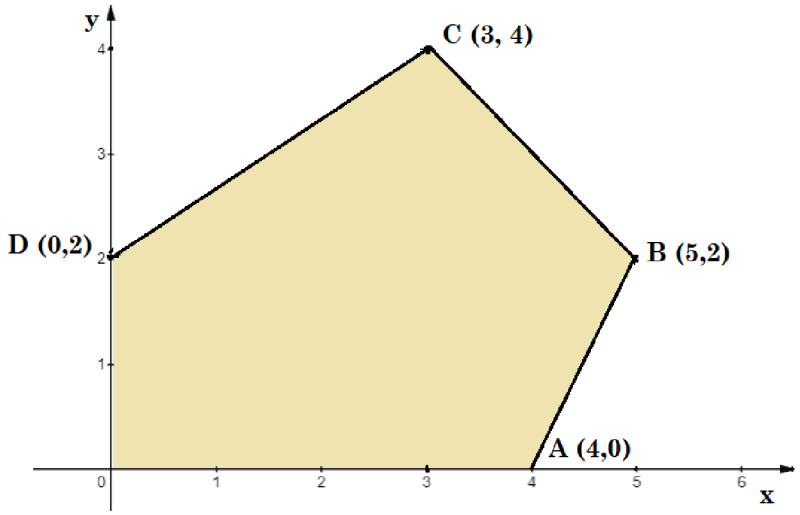
$x + 3y \leq 60,$

$x + y \geq 10,$

$x \leq y;$

$x, y \geq 0.$

Q13. The corner points of the feasible region determined by the system of linear constraints are as shown below :



Answer each of the following :

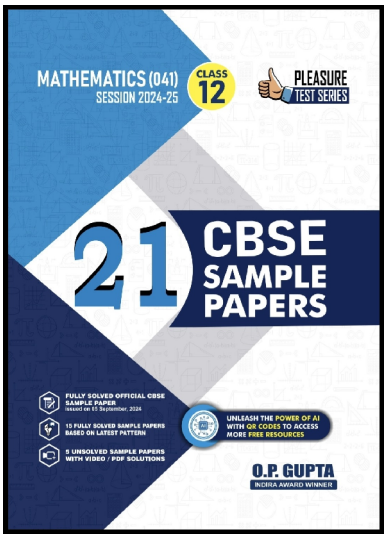
(i) Let $z = 13x - 15y$ be the objective function. Find the maximum and minimum values of z and, also the corresponding points at which the maximum and minimum values occur.

(ii) Let $z = kx + y$ be the objective function. Find k, if the value of z at A is same as the value of z at B.

ⓘ **You may Share this PDF File with other Students and Teachers.**

ⓘ **You may add our WhatsApp no. 9650350480 to your groups to get Regular updates.**

#WE-ARE-ON-MISSION



CBSE 21 SAMPLE PAPERS
For CBSE 2024-25 Exams ▪ Class 12 Maths (041)
Pleasure Test Series By O.P. Gupta
- ✪ **Multiple Choices Questions**
- ✪ **Assertion-Reason (A-R) Questions**
- ✪ **Subjective type Questions (2 Markers, 3 Markers & 5 Markers)**
- ✪ **CASE STUDY QUESTIONS (As per Latest format for 2024-25)**
- ✪ **H.O.T.S. Questions**
- ✪ **Detailed Solutions** of 16 Sample Papers
- ✪ **ANSWERS** of 5 Unsolved Sample Papers (with Video Solutions)

MANY DIRECT QUESTIONS HAVE BEEN DIRECTLY TAKEN IN THE RECENT CBSE EXAMS.. #We-Are-On-Mission

For order related queries, please contact by WhatsApp @ +91 9650350480 (only message)

✪ Buy on Amazon & Flipkart

Apart from being a content developer and author, Mr O.P. GUPTA enjoys Math Learning with the Students of XI & XII @ Think Academy.
Add. 1st Floor, Opp. HP Petrol Pump, Thana Road, Dhansa Bus Stand Metro Station, Najafgarh, New Delhi

💻 Detailed **Solutions** will be uploaded on the YouTube Channel -- keep Subscribed
YouTube.com/MathematiciaByOPGupta

theopgupta.com
THE OPGUPTA

MATHEMATICIA BY O.P. GUPTA

...a name you can bank upon!

Feel Safe to **Share this Document** with other math scholars

CLICK NOW TO Download

or, just type - theopgupta.com

FREE PDF TESTS AND ASSIGNMENTS OF THE CLASSES XII, XI & X

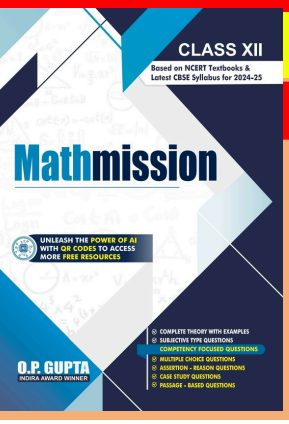
To get FREE PDF Materials, join WhatsApp Teachers Group by Clicking on the Logo

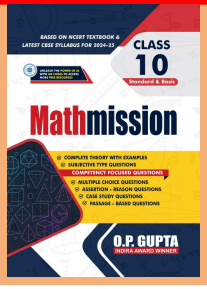
Click on the Book cover to buy!

If you are a Student, then you may join our Students Group

CLICK HERE FOR CLASSES IX & X

CLICK HERE FOR CLASSES XI & XII





You can add our WhatsApp no. +919650350480 to your Groups also

Many Direct Questions from our Books have been asked in the recent CBSE Exams

MATHMISSION FOR XII, XI & X

2024-25 Edition

Buy our books on amazon Flipkart

/theopgupta /theopgupta /theopgupta /@theopgupta

For Bulk Orders of our Books at Discounted Price, contact on +91-9650350480

MOST REPUTED BOOKS OF XII, XI & X

MATHMISSION
REFRESHER BOOKS

Our all-inclusive Refresher-Guide feature

- Theory
- Examples
- Subjective Questions
- Multiple Choice Questions
- Assertion Reason Questions
- Case Study Questions
- Answers

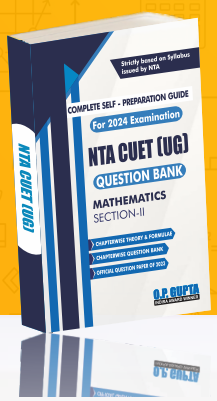
SOLUTIONS OF MATHMISSION

MOST TRUSTED SAMPLE PAPERS

Our popular Sample Papers Guide feature

- Official CBSE Sample Papers with Solutions
- Plenty of Fully Solved Sample Papers
- Unsolved Sample Papers for Practice

NTA CUET (UG)
Mathematics Question Bank



Buy our books Online

amazon

Flipkart

Scan QR-Code to buy our books on Amazon

GET BULK-ORDER @ THE DISCOUNTED PRICES FOR SCHOOLS, COACHING & TUITION INSTITUTES.
For Details, Contact On

WhatsApp @ +919650350480