Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Graphical Method-I

Graphical Method-II

Simplex Method - I

Simplex Method - II

Quiz : Assignment 9

Problem

Week 10

Week 11

Week 12

Download Videos

Feedback Link

Text Transcripts

General Linear Programming

How to access the portal?

Assignment 9

Mentor

reviewer4@nptel.iitm.ac.in ~ NPTEL » Higher Engineering Mathematics About the Course Ask a Question Announcements

Course outline

1) The following L. P. P. Max. Z = 2x + y

subject to

Unit 10 - Week 9

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

 $x + 2y \le 10$

 $x + y \le 6$

 $x - y \le 2$

 $x - 2y \le 1$

has the optimal value

No, the answer is incorrect.

2) The following L. P. P.

Max. Z = 6x - 2y

and $x, y \ge 0$ has

an unbounded solution

No, the answer is incorrect.

3) The following L. P. P.

Min. Z = x + y

and $x, y \ge 0$ has

an unique solution

an unbounded solution

No, the answer is incorrect.

infinite number of solutions

4) The following L. P. P.

and $x, y \ge 0$ has

an unbounded solution

no solution

Score: 0

an unique solution

Accepted Answers: an unbounded solution

Subject to

 $x_1 + x_2 \le 2$

 $2x_1 + x_3 \le 4$

 $x_1 + x_2 + s_1 = 2$

 $x_1 + x_2 + s_1 = 2$

 $x_1 + x_2 - s_1 = 2$

 $x_1 + x_2 + s_1 = 2$

 $2x_1 + x_3 - s_3 = 4$

Accepted Answers:

 $x_1 + x_2 + s_1 = 2$

subject to

 $x_1 + x_2 = 6$

Score: 0

is

and $x_1, x_2 \ge 0$,

 $x_1 + x_2 + 2x_3 \ge 3$

No, the answer is incorrect.

5) The standard form of the following LPP is

 $Max. Z = 3x_1 + 4x_2 + x_3$

 $Max. Z = 3x_1 + 4x_2 + x_3' - x_3''$

 $x_1 + x_2 + 2x_3' - 2x_3'' - s_2 = 3$

and $x_1, x_2, x_3', x_3'', s_1, s_2, s_3 \ge 0$.

 $Max. Z = 3x_1 + 4x_2 + x_3' - x_3''$

 $x_1 + x_2 + 2x_3' + 2x_3'' - s_2 = 3$

and $x_1, x_2, x_3', x_3'', s_1, s_2, s_3 \ge 0$.

 $Max. Z = 3x_1 + 4x_2 + x_3' - x_3''$

 $x_1 + x_2 + 2x_3' - 2x_3'' - s_2 = 3$

and $x_1, x_2, x_3', x_3'', s_1, s_2, s_3 \ge 0$.

 $2x_1 + x_3' + x_3'' + s_3 = 4$

 $Max. Z = 3x_1 + 4x_2 + x_3$

and $x_1, x_2, x_3, s_1, s_2, s_3 \ge 0$.

 $Max. Z = 3x_1 + 4x_2 + x_3' - x_3''$

 $x_1 + x_2 + 2x_3' - 2x_3'' - s_2 = 3$

and $x_1, x_2, x_3', x_3'', s_1, s_2, s_3 \ge 0$.

6) The standard form of following L. P. P.

 $2x_1 + x_3' - x_3'' + s_3 = 4$

Min. $Z = 2x_1 + x_2$

 $x_1 - x_2 - x_3 = -2$

 $x_1 + 2x_2 + x_4 = 1$

and $x_1, x_3, x_4 \ge 0$,

 $Max. Z = -2x_1 - x_2' + x_2''$

 $-x_1 + x_2' - x_2'' + x_3 = 2$

 $x_1 + 2x_2' + 2x_2'' + x_4 = 1$

and $x_1, x_2', x_2'', x_3, x_4 \ge 0$.

 $Max. Z = -2x_1 - x_2' + x_2''$

 $-x_1 + x_2' - x_2'' + x_3 = 2$

 $x_1 + 2x_2' - 2x_2'' + x_4 = 1$

and $x_1, x_2', x_2'', x_3, x_4 \ge 0$.

 $Max. Z = -2x_1 - x_2' + x_2''$

 $-x_1 + x_2' - x_2'' + x_3 = 2$

 $x_1 + 2x_2' - 2x_2'' + x_4 = 1$

and $x_1, x_2', x_2'', x_3, x_4 \ge 0$.

 $Max. Z = -2x_1 - x_2' + x_2''$

 $x_1 - x_2' + x_2'' - x_3 = 2$

 $x_1 + x_2' - x_2'' = 6$

Accepted Answers:

 $x_1 + x_2' - x_2'' = 6$

subject to

200

180

220

240

Score: 0

-10

10

-11

-12

Score: 0

-11

No, the answer is incorrect.

Max. $Z = 4x_1 + 10x_2$

No, the answer is incorrect.

 $Max. Z = 2x_1 + 3x_2 + 10x_3$

 $x_1 + 2x_3 = 0$, $x_2 + x_3 = 1$,

 $x_1, x_2, x_3 \geq 0,$

Accepted Answers:

Subject to

is given by

No, the answer is incorrect.

Accepted Answers:

Score: 0

Accepted Answers:

subject to

and is

Score: 0

200

Score: 0

 $x_1 + 2x_2' - 2x_2'' + x_4 = 1$

and $x_1, x_2', x_2'', x_3, x_4 \ge 0$.

No, the answer is incorrect.

 $Max. Z = -2x_1 - x_2' + x_2''$

 $-x_1 + x_2' - x_2'' + x_3 = 2$

 $x_1 + 2x_2' - 2x_2'' + x_4 = 1$

and $x_1, x_2', x_2'', x_3, x_4 \ge 0$.

 $Max. Z = 2x_1 + 5x_2 + 7x_3$

 $x_1 + 4x_2 + 2x_3 \le 100$

 $x_1 + x_2 + 3x_3 \le 100$

using simplex method, is equal to

and $x_1, x_2, x_3 \ge 0$

No, the answer is incorrect.

Min. $Z = x_1 - 3x_2 + 2x_3$

 $3x_1 - x_2 + 2x_3 \le 7$

using simplex method, is equal to

 $-4x_1+3x_2+8x_3\leq 10,$

9) The optimal solutions for the following L. P. P.

 $x_1 = 50$, $x_2 = 0$ and $x_1 = 25/8$, $x_2 = 75/4$, Max Z = 200

 $x_1 = 0$, $x_2 = 20$ and $x_1 = 75/4$, $x_2 = 25/2$, Max Z = 200

 $x_1 = 0$, $x_2 = 20$ and $x_1 = 25/8$, $x_2 = 75/4$, Max Z = 200

 $x_1 = 50$, $x_2 = 0$ and $x_1 = 75/4$, $x_2 = 25/2$, Max Z = 200

 $x_1 = 0$, $x_2 = 20$ and $x_1 = 75/4$, $x_2 = 25/2$, Max Z = 200

 $x_1 = 0$, $x_2 = 1$ (non – basic); $x_3 = 0$ (basic); max. Z = 3

 $x_3 = 0$ (non - basic); $x_1 = 0$, $x_2 = 1$ (basic); max. Z = 3

 $x_2 = 1 (non - basic); x_1 = 0, x_3 = 0 (basic); max. Z = 3$

 $x_1 = 0$ (non - basic); $x_2 = 1$, $x_3 = 0$ (basic); max. Z = 3

 $x_1 = 0$ (non – basic); $x_2 = 1$, $x_3 = 0$ (basic); max. Z = 3

10) The solution of the following degenerate L. P. P.

 $2x_1 + x_2 \leq 50$,

 $2x_1 + 3x_2 \leq 90$,

 $2x_1 + 5x_2 \le 100$,

 $x_1, x_2 \geq 0,$

 $-2x_1 + 4x_2 \le 12$

 $x_1, x_2, x_3 \geq 0$

Accepted Answers:

subject to

 $3x_1 + 2x_2 + 4x_3 \le 100$

7) The maximum value of the objective function of the following L. P. P.

8) The value of the objective function of the following L. P. P.

 $x_1 + x_2' - x_2'' = 6$

 $x_1 + x_2' + x_2'' = 6$

 $x_1 + x_2' - x_2'' = 6$

 $x_1 + x_2 + 2x_3 - s_2 = 3$

No, the answer is incorrect.

 $2x_1 + x_3' - x_3'' + s_3 = 4$

 $2x_1 + x_3' - x_3'' + s_3 = 4$

Max. Z = 40x + 60y

 $2x + y \ge 70$

 $x + y \ge 40$

 $x + 3y \ge 90$

infinite number of solutions

Accepted Answers:

subject to

infinite number of solutions

no solution

Score: 0

infinite number of solutions

an unique solution

no solution

Accepted Answers: an unbounded solution

subject to

Score: 0

 $2x - y \le 2$

 $5x + 10y \le 50$

y ≤ 4

 $x + y \ge 1$

 $x \leq 3$

Accepted Answers:

subject to

and $x, y \ge 0$

8

10

31

12

Score: 0

10

Due on 2019-10-02, 23:59 IST.

1 point

Progress