Blank Quiz

Total points 0/10

Name: *

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M20AIE319

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Q. For the LPP described by the equations

$$\max 12x_1 + 12x_2$$
$$\text{s.t. } 3x_1 + 4x_2 \leq 12$$
$$4x_1 + 3x_2 \leq 12$$
$$x_1, x_2 \geq 0$$

- ○ Both the LPP and its dual attain optimality at the same point
- ◉ the dual of the LPP has unbounded solution ✗
- ○ The LPP has infinitely many optimal solutions
- ○ The dual of the given LPP has infinitely many solutions

No correct answers

✗ ···/2

Q. For the LPP described by the set of equations

$$\max 5x_1 + 3x_2$$
$$2x_1 + x_2 \geq 6$$
$$3x_1 + 4x_2 \leq 12$$
$$x_1, x_2 \geq 0$$

The optimal solution for the dual

- (●) lies in the first quadrant ✗
- ( ) lies in the second quadrant
- ( ) does not exist
- ( ) none of the other options is correct

No correct answers

✗ ···/2

Q The optimal solution to the LPP

$$\max 2x + 7y$$
$$\text{s.t. } 2x + y \geq 4$$
$$2x + 3y \leq 6$$
$$x, y \geq 0$$

- (●) does not change if 2x-2y=1 is introduced as an additional constraint ✗
- ( ) does not change if 2x+2y=1 is introduced as an additional constraint
- ( ) does not change if 2x+3y=1 is introduced as an additional constraint
- ( ) does not change if 2x-3y=1 is introduced as an additional constraint

No correct answers

✗ ···/1

For the two statements A and B given as

(A) An LPP has an optimal solution iff the LPP with additional integer constraints has an optimal solution

(B) The time complexity of Gomory Cut Constraint method is exponential (in the worst case).

- (●) Both A and B are correct ✗
- ( ) A is correct but B is incorrect
- ( ) A is incorrect but B is correct
- ( ) Both A and B are incorrect

No correct answers

✗ ···/2

The optimal solution to the IPP

$$\min 4x_1 + 3x_2$$

$$\text{s.t. } x_1 \leq 4$$

$$x_2 \leq 6$$

$$5x_1 + 3x_2 \geq 30$$

$$x_1, x_2 \geq 0, \text{ integers}$$

- ○ exists and the optimal value is 28
- ○ exists and the optimal value is 27
- ○ does not exist
- ◉ is unbounded ✗

No correct answers

✗ ···/1

The Gomory Cut Constraint Introduced to solve an IPP

- (●) is a plane parallel to one of the constraints ✗
- ( ) Passes through the optimal solution of the LPP in the previous iteration
- ( ) passes through origin
- ( ) none of the other options is correct

No correct answers

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