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Different Types of Linear Programming Problems

SUBJECT : (Mathematics)
CHAPTER NUMBER: 12
CHAPTER NAME : L. P. P.

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

Example 1

Solve the following LPP graphically

Maximize: $Z = 5x + 3y$

Subject to $3x + 5y \leq 15$

$5x + 2y \leq 10$

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

Example 2

Solve the following LPP by the graphical method

Minimize $Z = 20x + 10y$

Subject to

$$x + 2y \leq 40$$

$$3x + y \geq 30$$

$$4x + 3y \geq 60$$

and $x, y \geq 0$

Example 3

Solve the following LPP graphically

Minimize: $Z = 200x + 500y$

Subject to

$$x + 2y \geq 10$$

$$3x + 4y \leq 24$$

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

Example 4

Determine graphically the minimum value of the objective function

$$Z = -50x + 20y$$

Subject to the constraints:

$$2x - y \geq -5$$

$$3x + y \geq 3$$

$$2x - 3y \leq 12$$

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

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Assignments

1. Solve the following LPP graphically.

Maximize: $Z = 5x + 3y$
Subject to $3x + 5y \leq 15$
$5x + 2y \leq 10$
and $x \geq 0,\ y \geq 0$

2. Determine graphically the minimum value of the objective function

$$Z = -50x + 20y$$

Subject to the constraints: $2x - y \geq -5$
$3x + y \geq 3$
$2x - 3y \leq 12$
and $x \geq 0,\ y \geq 0$

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