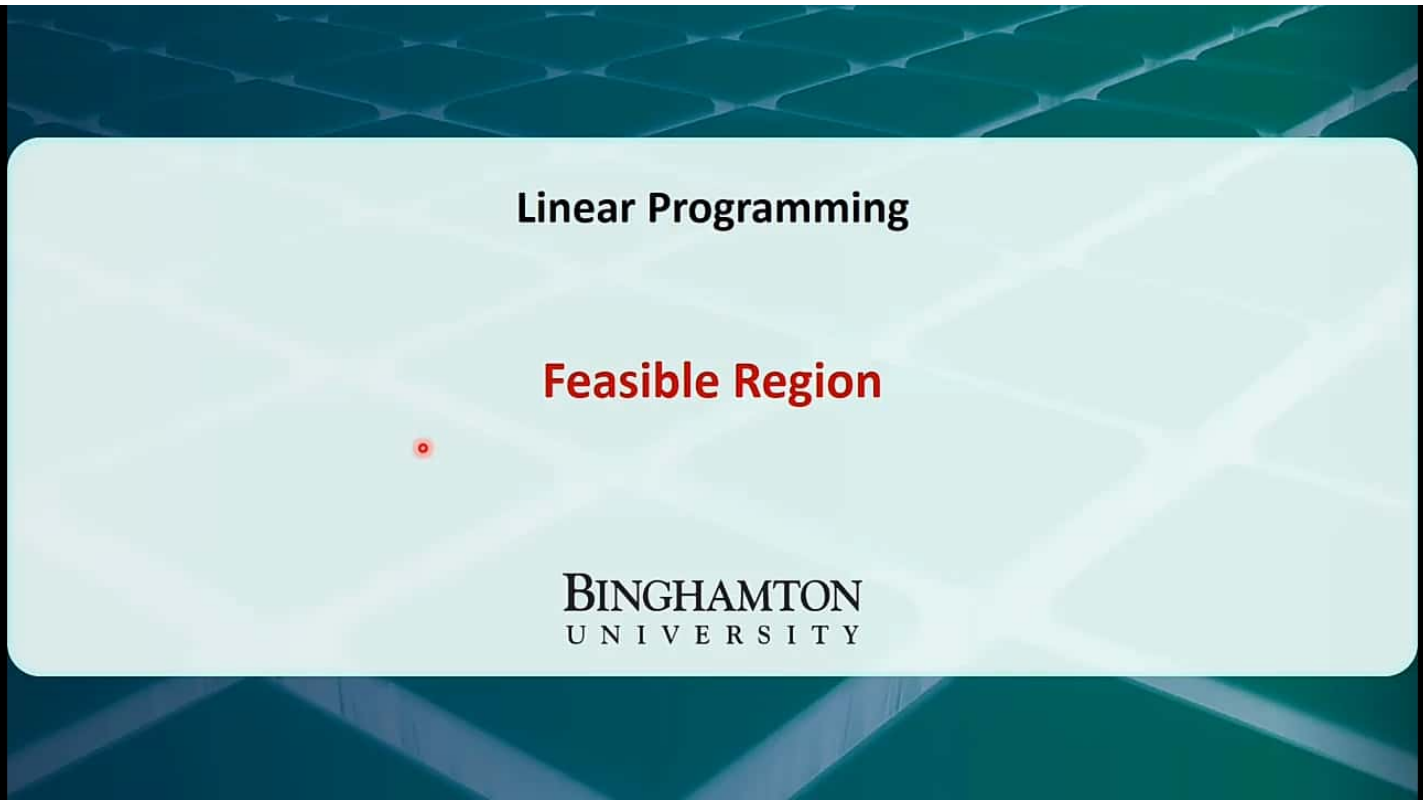
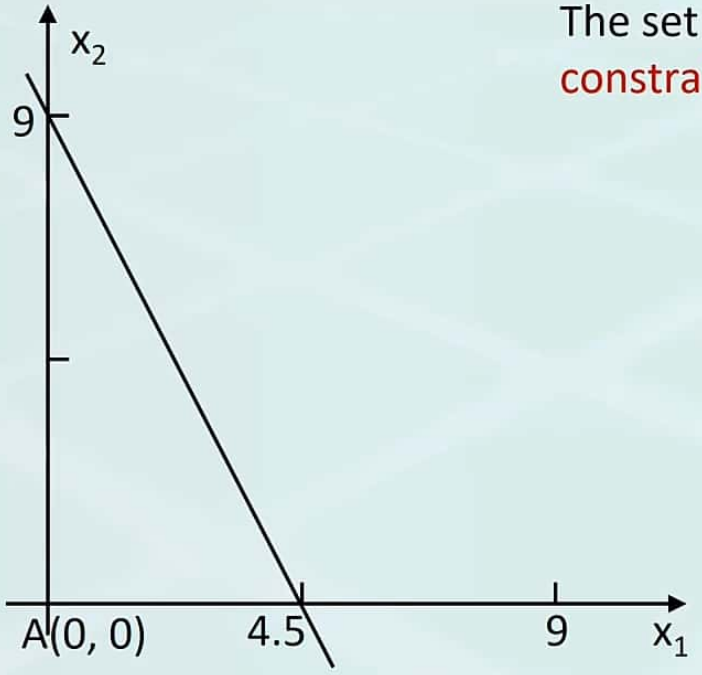


Find Feasible Region Graphically



The set of all points satisfying all the LP's constraints and sign restrictions.

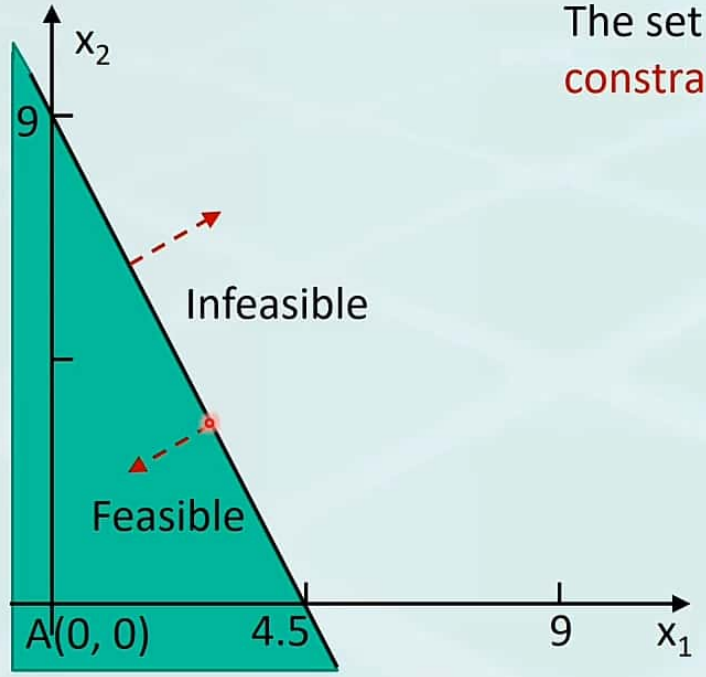
$2x_1 + x_2 \leq 9$

$2x_1 + x_2 = 9$

$(x_1=0)\ x_2=9$

$x_1=4.5\ (x_2=0)$

Find Feasible Region Graphically



The set of all points satisfying all the LP's constraints and sign restrictions.

$$2x_1 + x_2 \leq 9$$

$$2x_1 + x_2 = 9$$

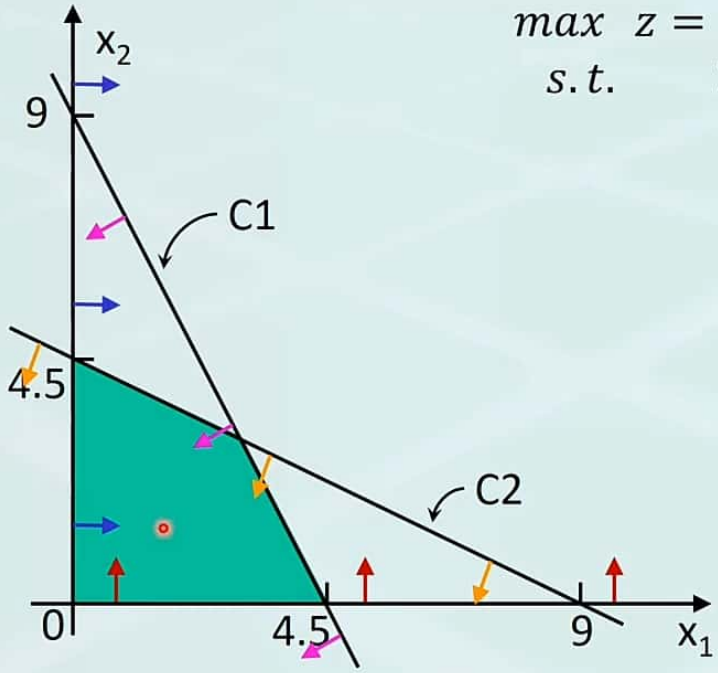
$$(x_1=0)\ x_2=9$$

$$x_1=4.5\ (x_2=0)$$

Check Point A (0, 0):

$$2\times0 + 0 = 0 \leq 9 \text{ (Feasible)}$$

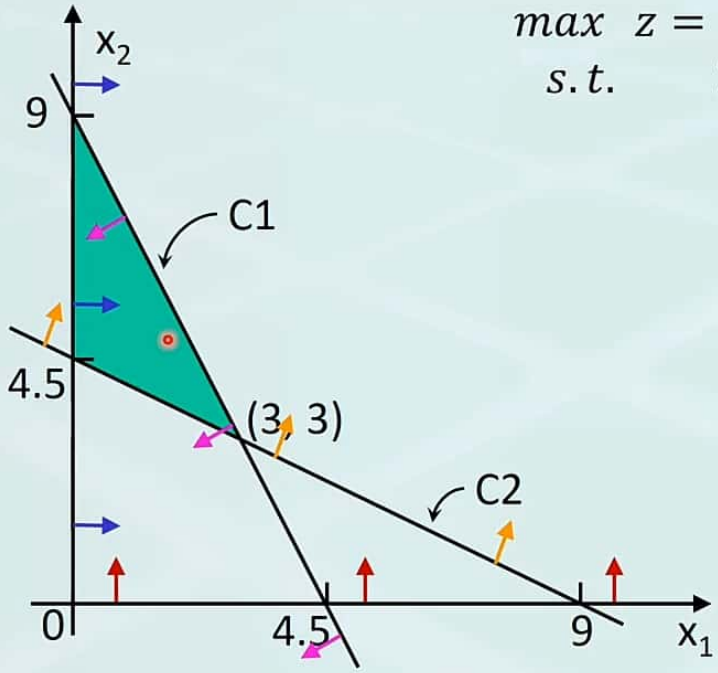
Feasible Region - Example 1



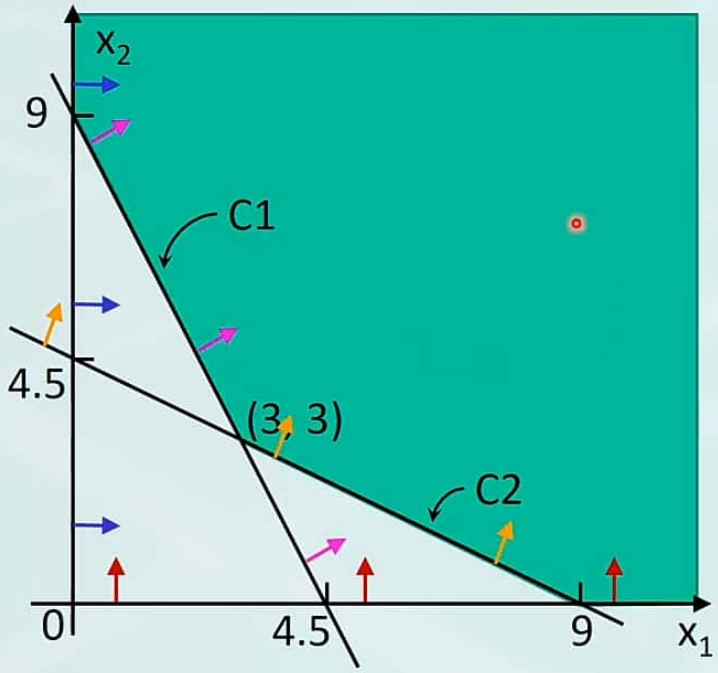
$$max \quad z = 3x_1 + 2x_2$$
$$s.t. \quad 2x_1 + x_2 \leq 9 \text{ (C1)}$$
$$x_1 + 2x_2 \leq 9 \text{ (C2)}$$
$$x_i \geq 0 \ (i = 1,2)$$

Feasible Region - Example 2

$$max \quad z = 3x_1 + 2x_2$$
$$s.t. \quad 2x_1 + x_2 \leq 9 \text{ (C1)}$$
$$x_1 + 2x_2 \geq 9 \text{ (C2)}$$
$$x_i \geq 0 \ (i = 1,2)$$



Feasible Region - Example 3



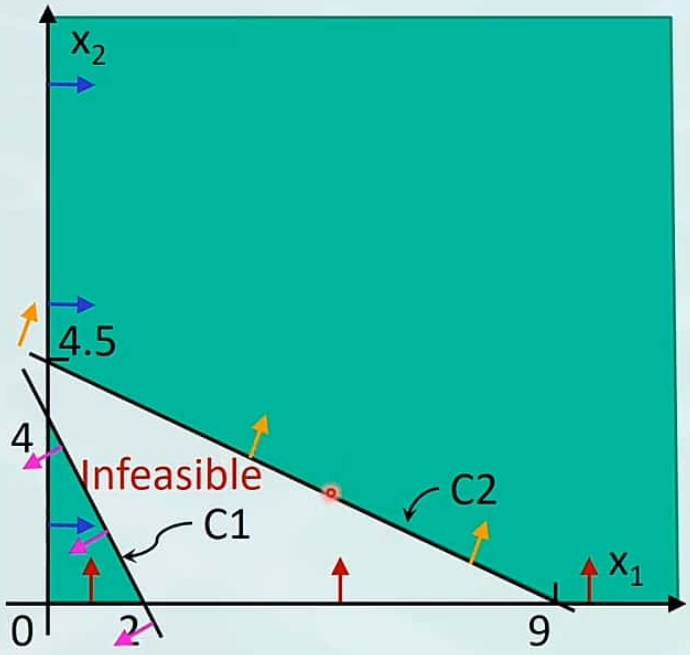
$$max \quad z = 3x_1 + 2x_2$$

$$s.t. \quad 2x_1 + x_2 \geq 9 \text{ (C1)}$$

$$x_1 + 2x_2 \geq 9 \text{ (C2)}$$

$$x_i \geq 0 \ (i = 1,2)$$

Feasible Region - Example 4



$$max \quad z = 3x_1 + 2x_2$$
$$s.t. \quad 2x_1 + x_2 \leq 4 \text{ (C1)}$$
$$x_1 + 2x_2 \geq 9 \text{ (C2)}$$
$$x_i \geq 0 \ (i = 1,2)$$