

Chapter 12

LINEAR PROGRAMMING

EXAMPLE- 2:

Maximise $z(x, y) = 3x + 4y$ subject to

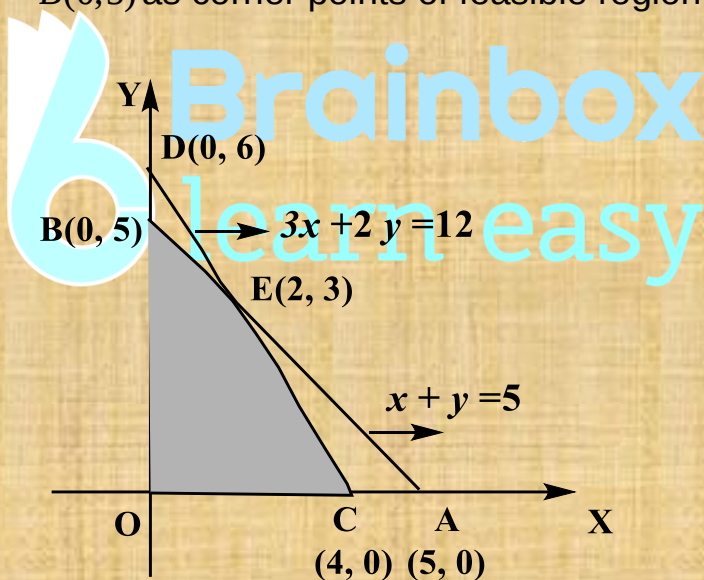
$$x + y \leq 5, 3x + 2y \leq 12, x \geq 0, y \geq 0.$$

SOLUTION:

On plotting the given constraints $x + y = 5$,

$3x + 2y = 12$, $x = y = 0$ we get $O(0, 0)$, $C(4, 0)$, $E(2, 3)$ and

$B(0, 5)$ as corner points of feasible region $OCEB$.



$$\therefore z(O) = 0$$

$$z(C) = 3 \times 4 + 4 \times 0 = 12$$

$$z(E) = 3 \times 2 + 4 \times 3 = 18$$

$$z(B) = 3 \times 0 + 4 \times 5 = 20$$

$\therefore$ Maximum value of 'z' is 20 at point $B(0, 5)$.