# Related Problems with Solutions

## Problem 2:

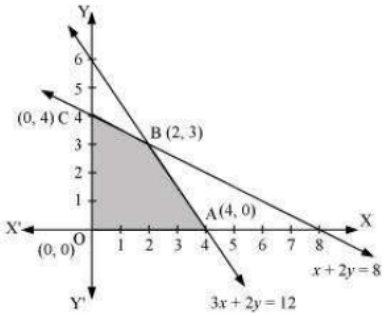
**Question 2:**

Minimise Z = $-3x + 4y$

subject to $x+2y\leq 8,\ 3x+2y\leq 12,\ x\geq 0,\ y\geq 0$.

Answer

The feasible region determined by the system of constraints, $x+2y\leq 8,\ 3x+2y\leq 12,\ x \geq 0$, and $y \geq 0$, is as follows.




The corner points of the feasible region are O (0, 0), A (4, 0), B (2, 3), and C (0, 4).

The values of Z at these corner points are as follows.

| Corner point | Z = −3x + 4y | |
|---|---|---|
| 0(0, 0) | 0 | |
| A(4, 0) | −12 | → Minimum |
| B(2, 3) | 6 | |
| C(0, 4) | 16 | |

Therefore, the minimum value of Z is −12 at the point (4, 0).