

Related Problems with Solutions

Problem 2:

Question 6:

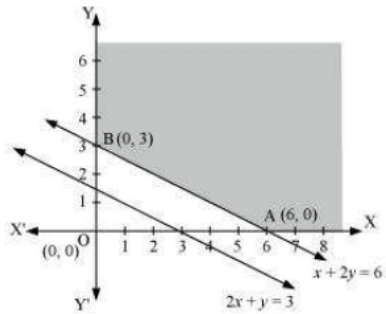
Minimise $Z = x + 2y$

subject to $2x + y \geq 3, x + 2y \geq 6, x, y \geq 0$.

Show that the minimum of Z occurs at more than two points.

Solution:

The feasible region determined by the constraints, $2x + y \geq 3, x + 2y \geq 6, x \geq 0$, and $y \geq 0$, is as follows.



The corner points of the feasible region are A (6, 0) and B (0, 3).

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

Corner point	$Z = x + 2y$
A(6, 0)	6
B(0, 3)	6

It can be seen that the value of Z at points A and B is same. If we take any other point such as (2, 2) on line $x + 2y = 6$, then $Z = 6$

Thus, the minimum value of Z occurs for more than 2 points.

Therefore, the value of Z is minimum at every point on the line, $x + 2y = 6$