To find the Vertices of Simple feasible region without drawing a Graph.

(1) **Bounded region:** The region surrounded by the inequalities $ax + by \leq m$ and $cx + dy \leq n$ in first quadrant is called bounded region. It is of the form of triangle or quadrilateral. Change these inequalities into equation, then by putting $x = 0$ and $y = 0,$ we get the solution also by solving the equation in which there may be the vertices of bounded region.

The maximum value of objective function lies at one vertex in limited region.

(2) **Unbounded region:** The region surrounded by the Inequations $ax + by \geq m$ and $cx + dy \geq n$ in first quadrant, is called unbounded region.

Change the inequation in equations and solve for $x = 0$ and $y = 0$. Thus we get the vertices of feasible region.

The minimum value of objective function lies at one vertex in unbounded region but there is no existence of maximum value.