

# ASSIGNMENT-10

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Download all python codes from

<https://github.com/Gayathri1729/SRFP/tree/main/Assignment10>

and latex-tikz codes from

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## 1 INEQUALITIES 2.52

Solve:  $2x+y \geq 8$ ,  $x+2y \geq 10$ .

## 2 SOLUTION

From the given inequalities we have,

$$\begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix} \mathbf{x} \geq \begin{pmatrix} 8 \\ 10 \end{pmatrix} \quad (2.0.1)$$

Now we have,

$$\mathbf{x} = \frac{1}{3} \begin{pmatrix} 2 & -1 \\ -1 & 2 \end{pmatrix} \begin{pmatrix} 8 \\ 10 \end{pmatrix} \quad (2.0.2)$$

$$\Rightarrow \mathbf{x} = \begin{pmatrix} 2 \\ 4 \end{pmatrix} \quad (2.0.3)$$

Thus the solution of the system of inequalities can be determined graphically and is represented in the figure 2.1,

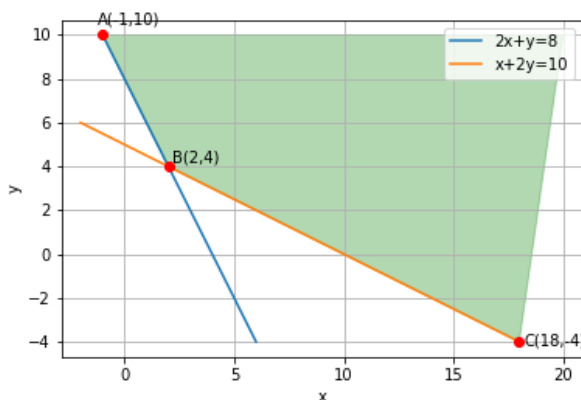


Fig. 2.1: Graphical solution