

# ASSIGNMENT 9

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Download all python codes from

<https://github.com/Sowmyabandi99/Assignment9/blob/main/assignment9.py>

Latex-tikz codes from

<https://github.com/Sowmyabandi99/Assignment9/blob/main/main.tex>

## 1 QUESTION No 2.44

Solve  $3y-5x < 30$ .

## 2 SOLUTION

Let  $3y-5x = 30$  intersects the x-axis and y-axis at **A** and **B** respectively.

1) Let  $\mathbf{A} = \begin{pmatrix} x \\ 0 \end{pmatrix}$

$$-5x = 30 \quad (2.0.1)$$

$$\Rightarrow x = -6 \quad (2.0.2)$$

$$\mathbf{A} = \begin{pmatrix} -6 \\ 0 \end{pmatrix} \quad (2.0.3)$$

2) Let  $\mathbf{B} = \begin{pmatrix} 0 \\ y \end{pmatrix}$

$$3y = 30 \quad (2.0.4)$$

$$\Rightarrow y = 10 \quad (2.0.5)$$

$$\mathbf{B} = \begin{pmatrix} 0 \\ 10 \end{pmatrix} \quad (2.0.6)$$

3) Origin  $= \begin{pmatrix} 0 \\ 0 \end{pmatrix}$  satisfy the equation  $3y-5x < 30$   
 $\Rightarrow$  The solution is the right side of the line  $3y-5x = 30$

4) The following python code is the diagrammatic representation of the solution in Fig. 2.1

Solution of  $3y-5x < 30$

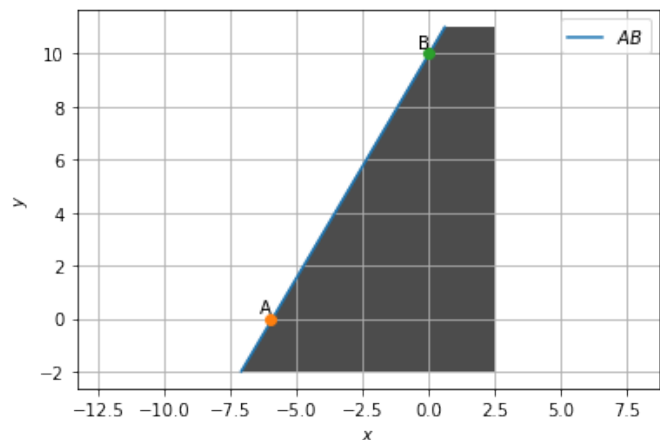


Fig. 2.1:  $3y-5x < 30$