

System of
1. Solve the inequality graphically :-

$$2x + y \geq 4 ; x + y \leq 3 ; 2x - 3y \leq 6$$

Solⁿ

(1) for $2x + y \geq 4 \Rightarrow x = 0 ; y = 4 \quad (0, 4)$
 $y = 0 ; x = 2 \quad (2, 0)$

origin test $(0, 0) \Rightarrow 2(0) + 0 = 0 \leq 4$

NOT Satisfy origin test.

means origin doesn't lie in region subtended by this inequality.

(2) for $x + y \leq 3 \Rightarrow x = 0 ; y = 3 \quad (0, 3)$
 $y = 0 ; x = 3 \quad (3, 0)$

origin test $(0, 0) \Rightarrow 0 + 0 = 0 \leq 3$

Satisfies origin test

means origin lie in region subtended by this inequality.

(3) for, $2x - 3y \leq 6 \Rightarrow x = 0 ; y = -2 \quad (0, -2)$
 $y = 0 ; x = 3 \quad (3, 0)$

(3) origin test $(0, 0) \Rightarrow 0 - 0 = 0 \leq 6$

Satisfies origin test.

means origin lie in region subtended by this inequality.

