

Ex. Graph the following inequality:

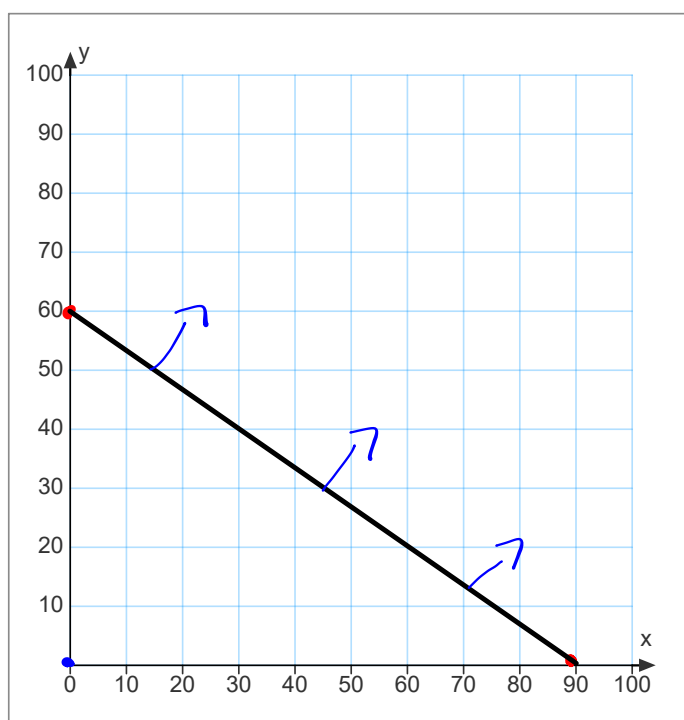
$$2x + 3y \geq 180$$

$$① \quad 2x + 3y = 180$$

X	Y
0	60
90	0

$2x + 3(0) = 180$
 $2x = 180$
 $x = 90$

$2(0) + 3y = 180$
 $3y = 180$
 $y = 60$



② Test (0,0) ?

$$2(0) + 3(0) \geq 180$$

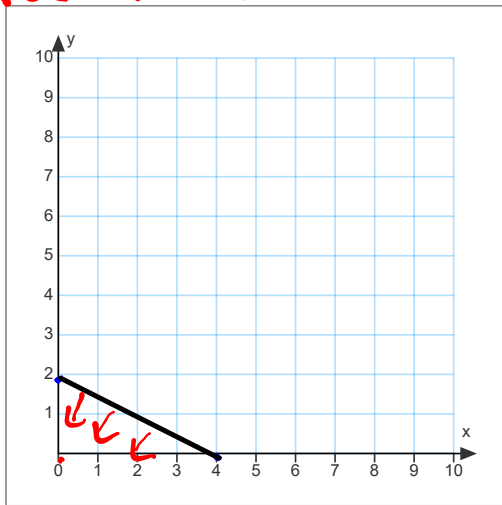
$$0 \not\geq 180$$

Examples

1. $10x + 20y \leq 40$

x	y
0	2
4	0

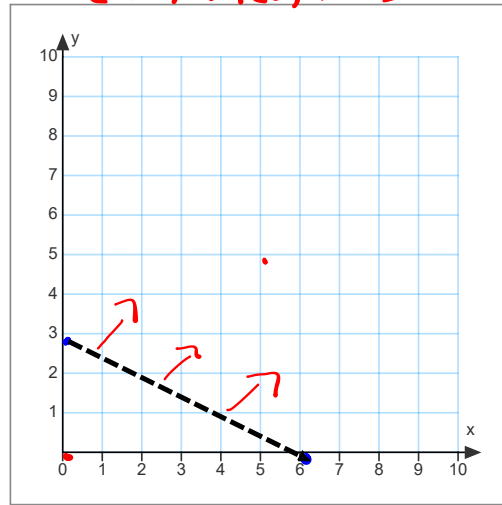
$10x + 20y = 40$
 $10(0) + 20(2) = 40$



2. $2x + 4y > 12$

x	y
0	3
6	0

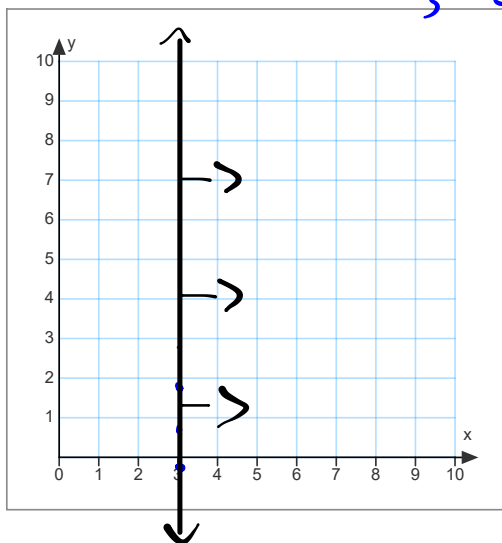
$2x + 4y = 12$
 $2(0) + 4(3) > 12$



3. $x \geq 3$

x	y
3	0
3	1
3	2

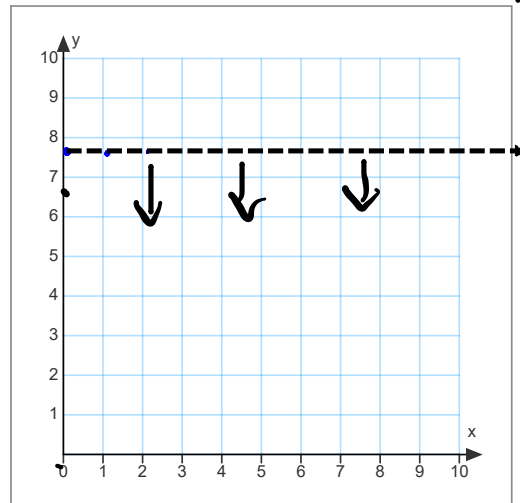
$x = 3$



4. $y < 8$

x	y
0	8
1	8
2	8

$y = 8$

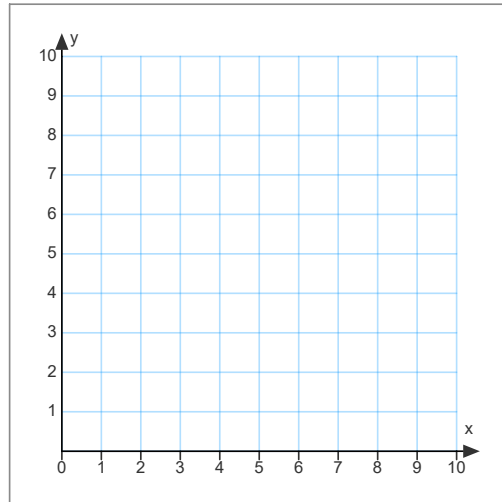
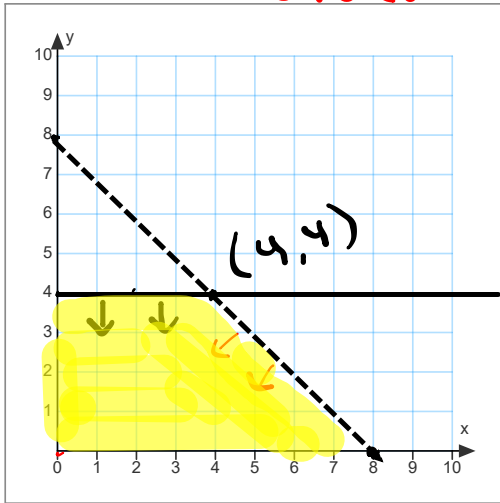


Graph the system of inequalities

The solution set will be the area shaded by both together

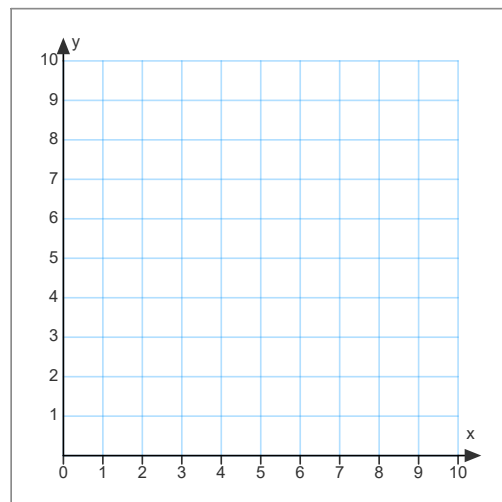
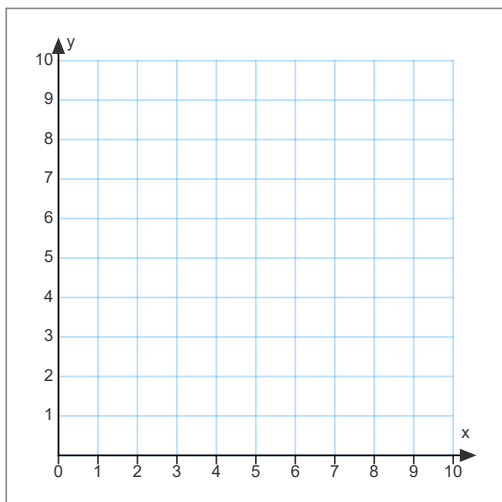
1. $y = 4$ $x + y = 8$ $\frac{x}{8} \Big| \frac{y}{8}$
 $y \leq 4$ $x + y < 8$
0 + 0 < 8

2. $y > x$ $10x + 10y \leq 100$



3. $x < 9$ $2x + 3y \geq 6$

4. $y \leq -\frac{1}{2}x + 10$ $y > \frac{2}{3}x$



Ex. Draw the polygon of constraints given the following constraints:

$$x \geq 0$$

$$y \geq 0$$

$$x + y \leq 60$$

$$x + y > 30$$

$$y \geq 2x$$