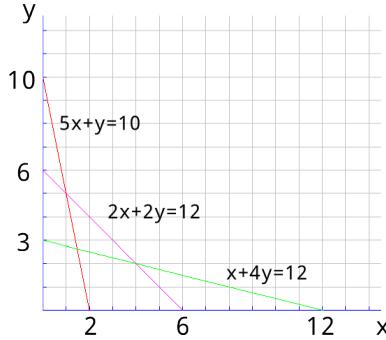


Task. Solve it graphically

$$\begin{cases} 5x + y \geq 10 \\ 2x + 2y \geq 12, \\ x + 4y \geq 12 \\ x, y \geq 0. \end{cases}$$

Solution. Let us draw the following lines

$$5x + y = 10, \quad 2x + 2y = 12, \quad x + 4y = 12.$$



Each of them divides the plane into two half planes.

Notice that the half plane $5x + y \geq 10$ does not contain the origin $(0, 0)$. Indeed, substituting $(0, 0)$ into left hand side we obtain the opposite inequality:

$$5 * 0 + 0 = 0 < 10$$

Similarly, the half planes $2x + 2y \geq 12$ and $x + 4y \geq 12$ also do not contain $(0, 0)$. Hence the solution of the system is the domain shown in the figure:

