

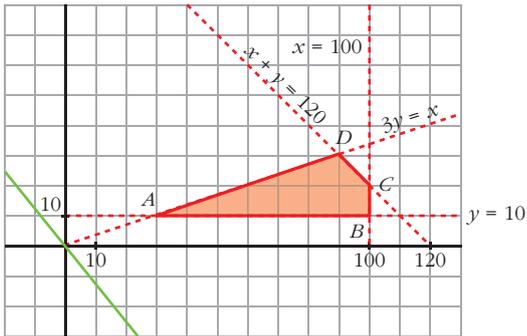


1 Maximiza la función  $F(x, y) = 25x + 20y$  sometida a las siguientes restricciones:

$$x + y \leq 120; \quad 3y \leq x; \quad x \leq 100; \quad y \geq 10$$

### Resolución

Dibujamos las rectas y hallamos los puntos de corte:



$$\left. \begin{array}{l} y = 10 \\ 3y = x \end{array} \right\} A(30, 10)$$

$$\left. \begin{array}{l} y = 10 \\ x = 100 \end{array} \right\} B(100, 10)$$

$$\left. \begin{array}{l} x = 100 \\ x + y = 120 \end{array} \right\} C(100, 20)$$

$$\left. \begin{array}{l} x + y = 120 \\ 3y = x \end{array} \right\} D(90, 30)$$

$$F(A) = F(30, 10) = 950$$

$$F(B) = F(100, 10) = 2700$$

$$F(C) = F(100, 20) = 2900$$

$$F(D) = F(90, 30) = 2850$$

El máximo se alcanza en  $C(100, 20)$  y vale 2900.