

$$x+2y \leq 120$$

$$\frac{2y}{2} \leq \frac{120-x}{2} \Rightarrow y \leq 60 - \frac{x}{2}$$

$$x+y \geq 60 - x \Rightarrow y \geq 60 - x$$

~~$$x-2y \geq 0 \Rightarrow y \leq \frac{x}{2}$$~~

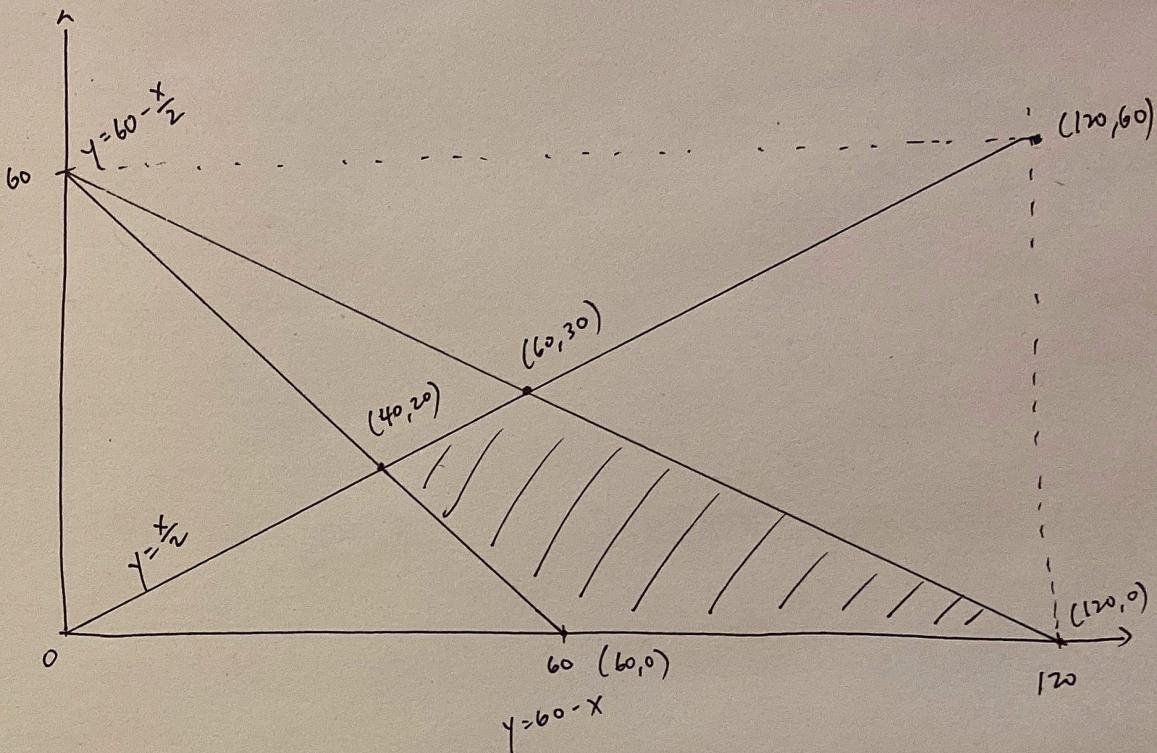
~~$$\frac{x-2y}{2} \leq 0$$~~

$$x, y \geq 0 \Rightarrow \begin{cases} x \geq 0 \\ y \geq 0 \end{cases} \quad \text{first quad.}$$

~~$$f(x,y) = 25x + 50y$$~~

~~$$f_x = 25$$~~

~~$$f_y = 50$$~~



$$f(x,y) @ (60,30) = 25(60) + 50(30) = \boxed{3000 \text{ MAX}} @ (60,30)$$

$$@ (40,20) = 25(40) + 50(20) = 2000$$

$$@ (60,0) = 60(25) + 0 = 1500 \text{ MIN}$$

$$@ (120,0) = 120(25) + 0 = \boxed{3000 \text{ MAX}} @ (120,0)$$