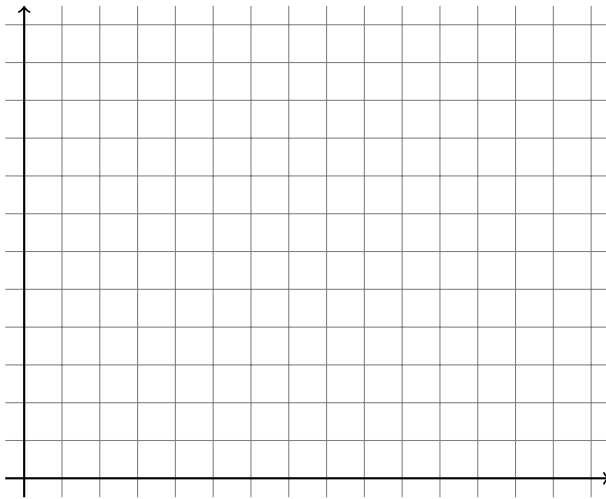


For each problem, show your work, including the formulas or arithmetic procedures which you used to get your answer.

1. **(15 points)** Answer the following questions about this linear-programming problem:

$$\text{Maximize } 7x + 3y \text{ subject to the conditions } \begin{cases} 2x + 5y \leq 100 \\ 3y \leq 45 \\ 4x + 2y \leq 120 \\ x, y \geq 0 \end{cases}$$

- (a) **(5 points)** Sketch the feasible region.



- (b) **(7 points)** Calculate the coordinates of every corner of the feasible region.

- (c) **(3 points)** Determine the values of x and y which maximize the objective function.