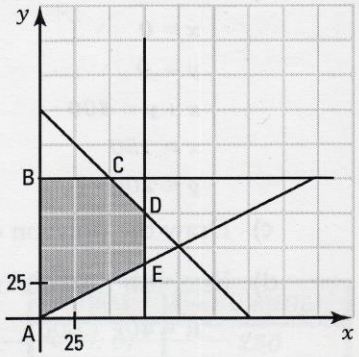
5. A landscape architect was hired by a cultural centre to design the exterior of the centre. The architect must observe the following constraints.

- The total area to be landscaped is at most 150 m².
- She must allot, at most, 75 m² for a flower bed and at most 100 m² for shrubs.
- She must allot, at most, an area twice as large for flowers as for shrubs.

Knowing that she charges \$200 per m² for flowers and \$125 per m² for shrubs, what area should she allot for each type of plant in order to maximize her revenue?



***x*: area allotted for flowers**

***y*: area allotted for shrubs**

$x \geq 0$

$y \geq 0$

$x + y \leq 150$

$x \leq 75$

$y \leq 100$

$x \leq 2y$

Vertices	$R = 200x + 125y$
A(0, 0)	*0*
B(0, 100)	*12 500*
C(50, 100)	*22 500*
D(75, 75)	*24 375*
E(75, 37,5)	*19 687.50*

She must allot 75 m² for flowers and 75 m² for shrubs.