Section 7.6

EX: A fruit grower has 150 acres of land available to raise two crops A and B. It takes one day to trim an acre of crop A and two days to trim an acre of crop B, and there are 240 days per year available from trimming. It takes 0.3 day to pick an acre of crop A and 0.1 day to pick an acre of crop B, and there are 30 days per year available for picking.

Find the number of acres of each fruit that should be planted to **maximize** the profit, assuming that the profit is \$140 per acres for crop A and \$235 per acre for crop B.

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Constraints:

$x \geq 0$

$y \geq 0$

$x + y \leq 150$

$x + 2y \leq 240$

$0.3x + 0.1y \leq 30$

Objective function:

The *optimal* solution is the ordered pair (x, y) that is within the _____ and which results in the _____ possible value of ___.

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For a given value of P, this is just a line!

$P = 140x + 235y$

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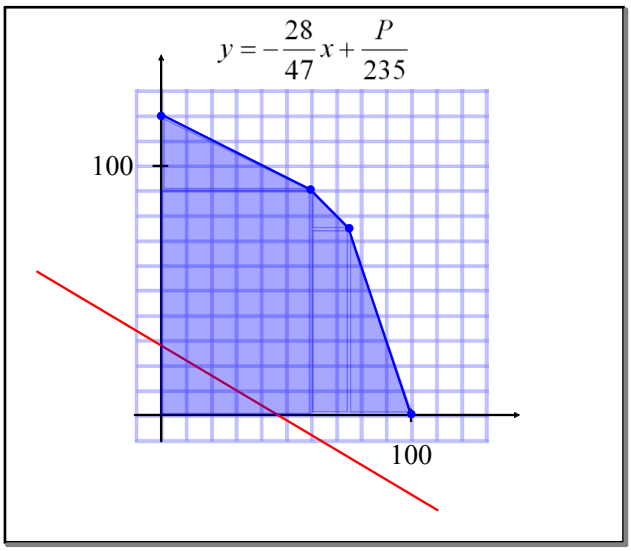

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In general, the optimal solution will always be a _____ of the feasible solution set.

All we need to do is check each vertex in the objective function and identify the maximum or minimum.

Vertices: $P = 140x + 235y$

(0, 0)
(0, 120)
(60, 90)
(75, 75)
(100, 0)

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