I am aware that any forms of cheating in this exam will result in zero grade and a disciplinary investigation, I accept all rules and regulations of this exam. I give permission for the processing of my personal data as stated in the Clarification Text provided on the Faculty of Engineering website.

Q: Wild West produces two types of cowboy hats. A type 1 hat requires three times as much labor time as type 2. If all available labor time is dedicated type 2, the company can produce a total of 450 type 2 hats a day. The market limits for the two types are 100 and 300, respectively. The profit is $8 per Type 1 and $5 per Type 2 hat. Determine the number of hats for each type to maximize profit.

① $x_1 \rightarrow$ type 1 , $x_2 \rightarrow$ type 2

Labor time

$x_1 \rightarrow 3t$

$x_2 \rightarrow t$

| 450t time a day

Constraints

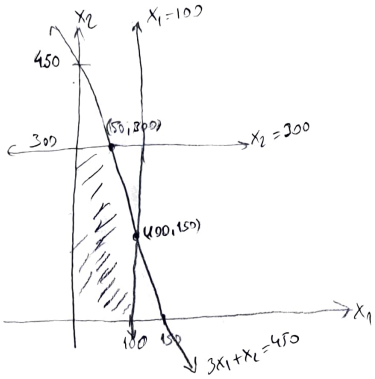
$x_1 \leq 100$

$x_2 \leq 300$

$3x_1 + x_2 \leq 450$

Objective Function

max $y = 8x_1 + 5x_2$



(1) $y = 8.50 + 5.300 = 1900 \rightarrow$ max

(2) $y = 8.100 + 5.150 = 1550$

$x_1 = 50$, $x_2 = 300$ when profit is max.

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Mert Sezer OKTAY

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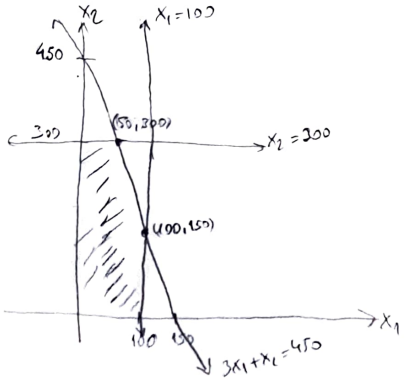

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