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

Göktuğ Göksa

Q1-) Wild west produces two types of cowboy hats. A type 1 hat requires three times as much labor time as a type 2. If the all available labor time is dedicated to Type 2 alone, the company can produce a total of 450 Type 2 hats a day. The market limits for the two types are 100 and 300 hats per day for Type 1 and Type 2, respectively. The profit is $8 per Type 1 hat and $5 per Type 2 hat. Determine the number of hats of each type that would maximize profit.

i. Build the mathematical model of the problem.
ii. Solve the problem graphically.

Type 1 hat for = x_1

Type 2 hat for = x_2

$x_1 \leq 450$

$x_2 \leq 450$

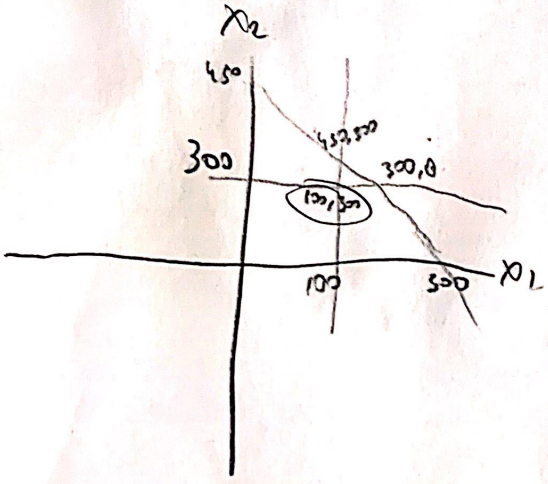
$100 \leq x_1 \leq 300$

Maximize profit.

$Z = 8x_1 + 5x_2 =$

$Z = 8.100 + 5.300 =$

$Z = 2300$



{ 450, 0
100, 300
300, 0
0, 450 }