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 exam. I give permission for the processing of my personal data as stated in the Clarification Text provided on the Faculty of Engineering website

Ceyhun Erdönmez

150120851

Wild west produces two types of cowboy hats. A type 1 hat requires three times as much labor as 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 $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 problem
ii. Solve the problem graphically

Type 1 hats : T1

Type 2 hats : T2

Max $8T1 + 5T2$

$$3T1 + T2 \leq 450$$
$$T1 \leq 100$$
$$T2 \leq 300$$

for $(50, 300)$: $8 \times 50 + 5 \times 300 = 1900 \$$
for $(100, 150)$: $8 \times 100 + 5 \times 150 = 1550 \$$

for maximize profit T1 : 50 and T2 : 300
as a result profit 1900 $

A (50, 300)

B (100, 150)