I am aware that any forms of cheating in this exam will result in a zero grade and a 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.

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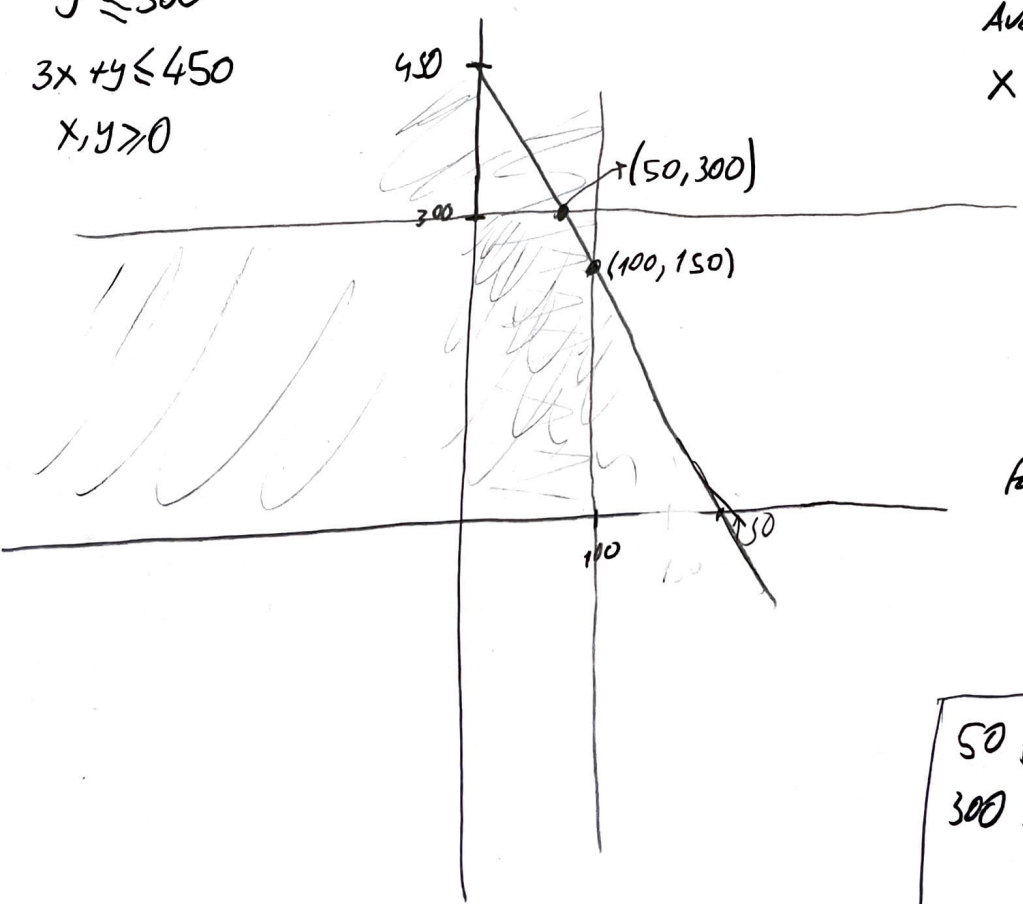
① Wild west produces two types of cowboy hats. Type1 hat requires three times labor time than type2. If all time is dedicated to type2. They would produce 450 type 2 hats. Market limits 100 and 300 profit for each $8 and $5.

Maximize profit $P = 8x + 5y$

X: # of Type 1 produced
y: # of Type 2 produced

Type 2 requires T hours.
Type 1 requires 3T hours.
Available time is 450 T.
$x \cdot 3T + y \cdot T \leq 450T$

$x \leq 100$
$y \leq 300$
$3x + y \leq 450$
$x, y \geq 0$



for (50, 300) $\Rightarrow$ $\underbrace{8 \cdot 50}_{400} + \underbrace{5 \cdot 300}_{1500} = 1900$

(100, 150) $\Rightarrow$ $\underbrace{8 \cdot 100}_{800} + \underbrace{5 \cdot 150}_{750} = 1550$

50 type 1
300 type 2
hats maximize the profit

$1900