I am aware that any forms of cheating in this exam will result in zero grade and a disciplinary action. I accept all rules and regulations regarding to 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.

1-) Wild west produces 2 type of hats type 1 requires 3 times as much labor time as type 2. Company can produce total of 450 type 2 a day. Market limits are 100 and 300. Profits are 8 $ and 5 $.

Determine the number of hats of each type that would maximize profit.

i-) Mathematical formula

x_1 : # of type 1 hats to be produced

x_2 : # of type 2 hats to be produced

Maximize $z = 8x_1 + 5x_2$

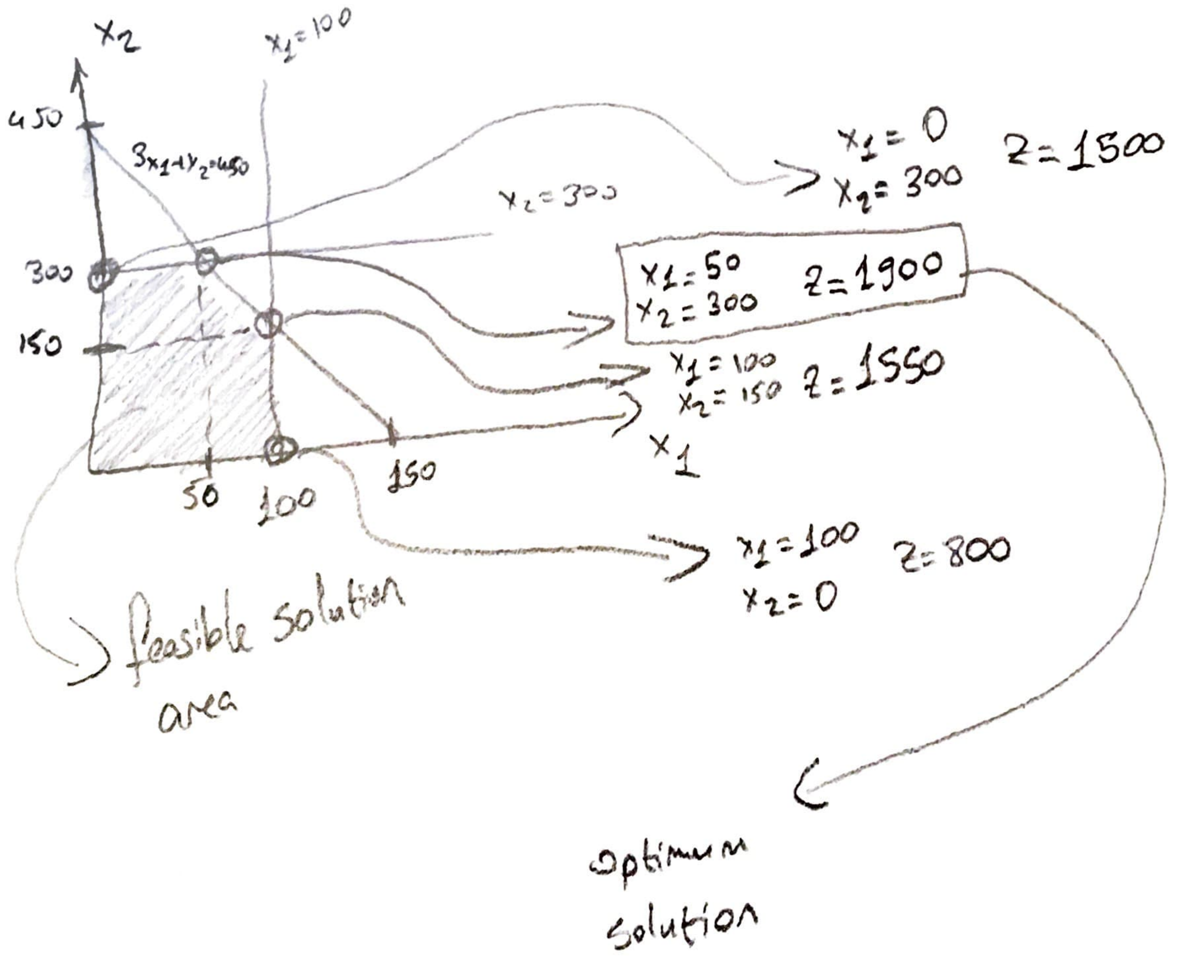
$x_1, x_2 \geq 0$ non negative constraint

$3x_1 + x_2 \leq 450$ produce power constraint

$x_1 \leq 100$

$x_2 \leq 300$ market limit constraints

ii-) Graphical solution



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