Doğukan ŞAHİN 150119062

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(1) 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 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 Maximum

1- Build Mathematical model of probl.

2- Solve graphically

decision variables

Type 1 $= x_1$

Type 2 $= x_2$

$Z = 8x_1 + 5x_2$

$3x_1 = x_2$

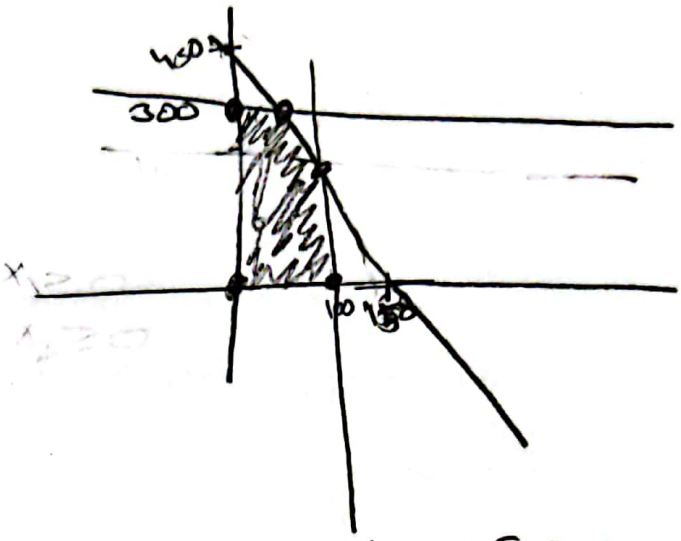
$3x_1 + x_2 \leq 450$

$x_1 \geq 0$

$x_2 \geq 0$

$x_1 \leq 100$

$x_2 \leq 300$



(0, 300) → $8.0 + 5 \times 300 = 1500$

(0, 0) → 0

(50, 300) → $8.50 + 5.300 = 1900$

(100, 150) → $8.100 + 5.150 = 800 + 750 = 1550$

(100, 0) → $8.100 + 5.0 = 800$