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Q1 Wild west produces two types of cowboy hats A type1 req. three times as much labor time as type2 If all labor dedicated to Type 2 production amount is 450 Type 2. Market limits for two types 100 and 300 per day T1 T2. The profit $8 per Type 1 and $5 per Type 2. Determine number of hats of each Type max. profit

I. Build math. problem II. solve graphically.

Answer

1) Type I = x_1

Type II = x_2

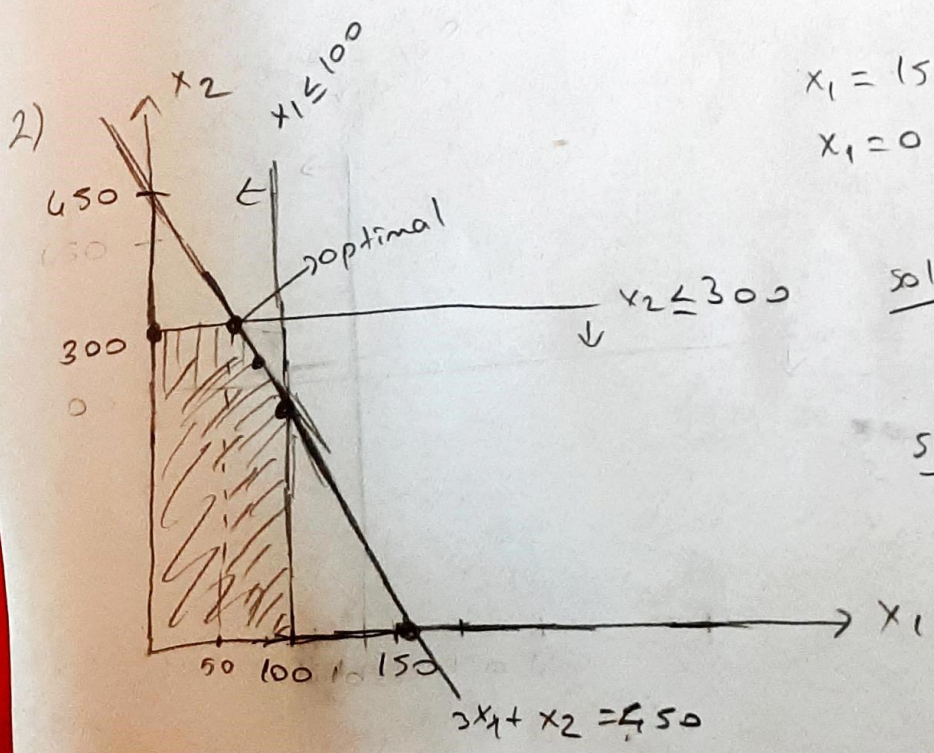
$3x_1 + x_2 = 450$ $Z = 8x_1 + 5x_2$ (profit)

$x_1 \leq 100$

$x_2 \leq 300$

$x_1, x_2 \geq 0$

2)



$x_1 = 150$ $x_2 = 0$

$x_1 = 0$ $x_2 = 450$

sol1) $x_1 = 100$, $x_2 = 150$ $Z = 800 + 750$, $Z = 1550$ $

sol2) $x_2 = 300$, $x_1 = 50$ $Z = 400 + 1500$

$Z = 1900$ $

optimal solution

50 Type I hats

300 Type II hats