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ENES 0200

150113607

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. Limits are 100 and 300. The profit is \$8 per Type 1 hat and \$5 per Type 2 hat. Determine maximum profit.

i. Build the mathematical model of problem

ii. Solve the problem graphically.

Type 1  $\rightarrow x$  Type 2  $\rightarrow y$

i. All produce  $\rightarrow 450 T$

Type 1 hat  $\rightarrow 3T$

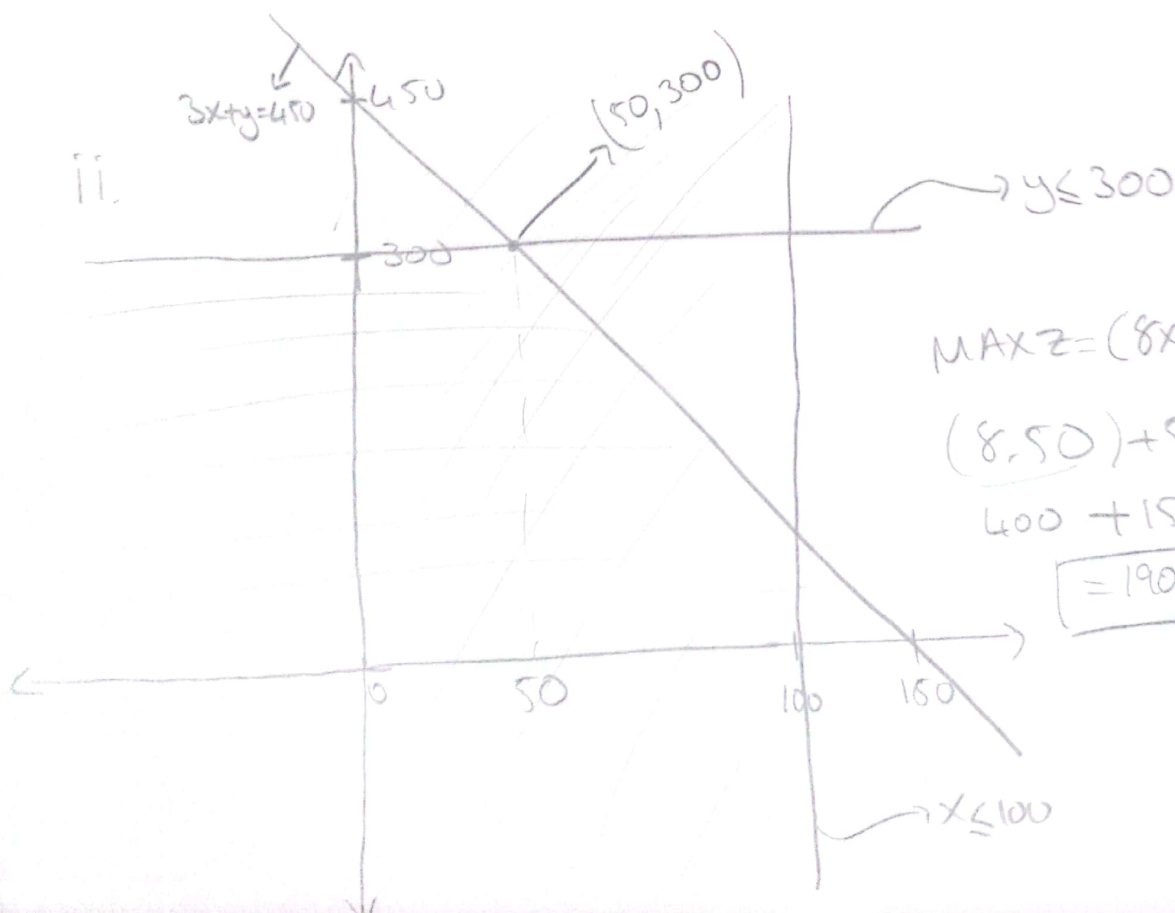
Type 2 hat  $\rightarrow T$

$$\text{MAX } Z = (8x + 5y)$$

$$3x + y = 450$$

$$x \leq 100$$

$$y \leq 300$$



$$\begin{aligned}\text{MAX } Z &= (8x + 5y) = \\ &= (8 \cdot 50) + 5 \cdot (300) \\ &= 400 + 1500 \\ &= 1900\end{aligned}$$