Batchan Aydın 150119797 26/04/2023

~~B. Aydın~~

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Question 1

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 all availble 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 the two types are 100 and 300 hats per day for Type1 and Type2 The profit is 8 Dollars per T1 hat and 5 per T2 hat. Determine the number of hats of each type that would maximize Profit.

i Build the math model of the problem,

ii Solve problem graphically.

Answers

i) Type 1 hats $= x_1$ Type 2 hats $= x_2$

To maximize $8x_1 + 5x_2$

Type 2 needs T hours,

450 = avaible hours.

Type 1 needs 3T hours.

$3Tx_1 + Tx_2 \leq 450T$

$3x_1 + x_2 \leq 450$

$x_1 \leq 100$

$x_2 \leq 300$

ii) Graph