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Question: 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 2 hat. Determine the number of hats of each that would maximize profit

i) Build the mathematical model of the problem

ii) Solve the problem graphically.

Total available = 450

i) $x \rightarrow$ type 1

$y \Rightarrow$ type 2

$3x + y \leq 450$

$x \leq 100 \quad y \leq 300$

$x, y \geq 0$

getting more maximizing

$8x + 5y$

$8(100) + 5(300) = 2300$

ii)