

IE3036 QUIZ 1

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Angela

- Q1) 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 marketing limits for the 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 that would maximize profit.
- Build the mathematical model of the problem.
 - Solve the problem graphically.

$$\frac{30}{T_1} = \frac{30}{T_2}$$

$$450y = 100x + 300y$$

$$\text{Maximize} = x + y$$

$$50y = 100x$$

$$y = 2x$$

$$450 \cdot 5 = 100 \cdot 8 + 300 \cdot 5$$

$$450y = 225x$$

$$\begin{array}{lcl} \text{profit per } x & = & 8 \\ \text{" " } y & = & 5 \end{array}$$