HW2 Q1

Pie → p
tonte → t

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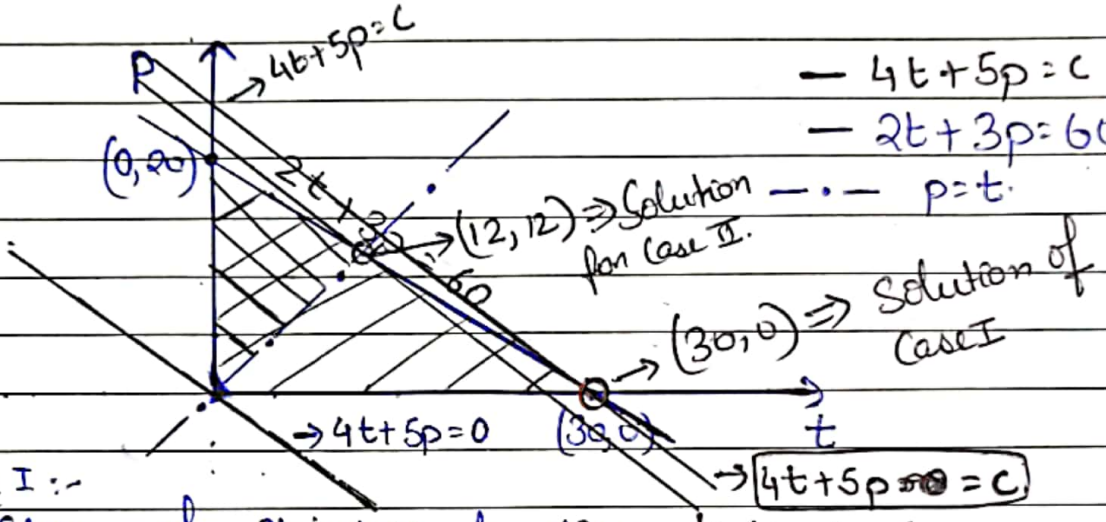
Points:- $4t + 5p \Rightarrow$ Maximize

Constraints:-

Time : $2t + 3p \leq 60$

$p \geq t$ (pie at least as many tontes).



Case I :-

Slope of Objective function ↳ $4t + 5p = 0$

$p = \frac{-4}{5} t$

↳ Cuts at (30,0) boundary point.

↳ Profit = $4(30) + 5(0) = 120$

Case II :- $p \geq t$ (constraint).

$2t + 3p = 60$, $p = t$

$2t + 3t = 60$

$t = 12 \Rightarrow p = 12$

profit = $4(t) + 5(t)$. $g(t) = g(12) = 108$

Decrease = 120 − 108 = 12

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