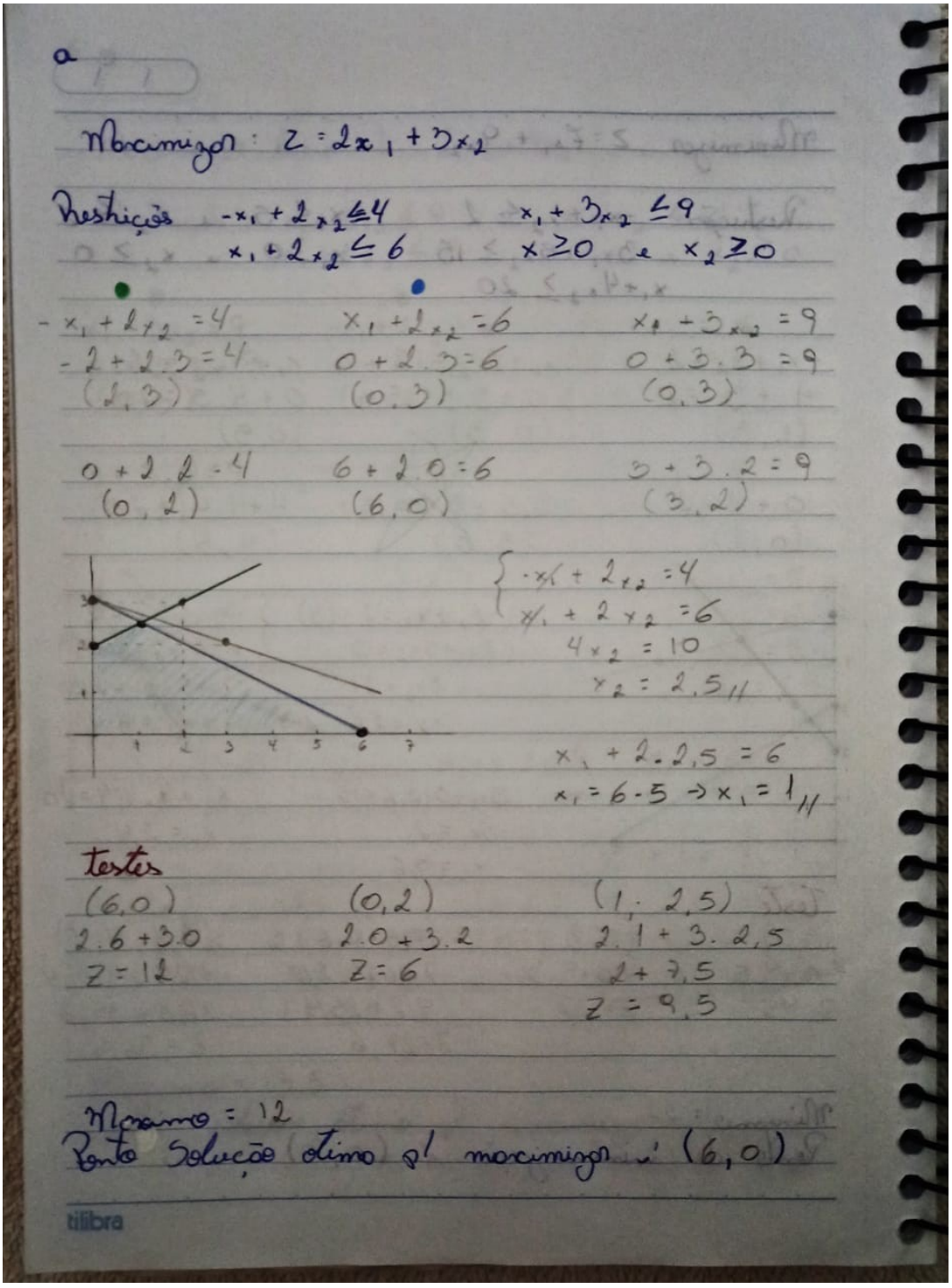
Aluno: Sandro Matheus Ramos Curso: Engenha de Software

Trabalho de Programação Linear à disciplina de Pesquisa Operacional

Maximizar: Z=2x1+3x2, sujeito a -x1+2 x2 ≤ 4, x1+2 x2 ≤ 6, x1+3 x2 ≤ 9, x1 ≥ 0, x2 ≥ 0



Maximizar receita: M=0,3 x1+0,5 x2, sujeito a 2x1+ x2 ≤ 2, x1+3 x2 ≤3, x1 ≥ 0, x2 ≥ 0

b

Maximizar receita $M = 0{,}3x_1 + 0{,}5x_2$

Restrições $2x_1 + x_2 \leq 2$

$x_1 + 3x_2 \leq 3$

$x_1 \geq 0$ e $x_2 \geq 0$

$2x_1 + x_2 = 2$

$2 \cdot 1 + 0 = 2$

$(1, 0)$

$x_1 + 3x_2 = 3$

$0 + 3 \cdot 1 = 3$

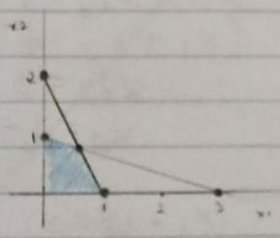
$(0, 1)$

$2 \cdot 0 + 2 = 2$

$(0, 2)$

$3 + 3 \cdot 0 = 3$

$(3, 0)$



$$\begin{cases} 2x_1 + x_2 = 2 \\ x_1 + 3x_2 = 3 \quad (-2) \end{cases}$$

$$\begin{array}{r} 2x_1 + x_2 = 2 \\ -2x_1 - 6x_2 = -6 \\ \hline -5x_2 = -4 \end{array} \quad x_2 = \frac{-4}{-5} \quad x_2 = 0{,}8$$

$x_1 = 3 - 0{,}8 \cdot 3$

$x_1 = 3 - 2{,}4 \quad x_1 = 0{,}6$

teste

$(0, 1)$

$0{,}3 \cdot 0 + 0{,}5 \cdot 1$

$M = 0{,}5$

$(1, 0)$

$0{,}3 \cdot 1 + 0{,}5 \cdot 0$

$M = 0{,}3$

$(0{,}6 ; 0{,}8)$

$0{,}3 \cdot 0{,}6 + 0{,}5 \cdot 0{,}8$

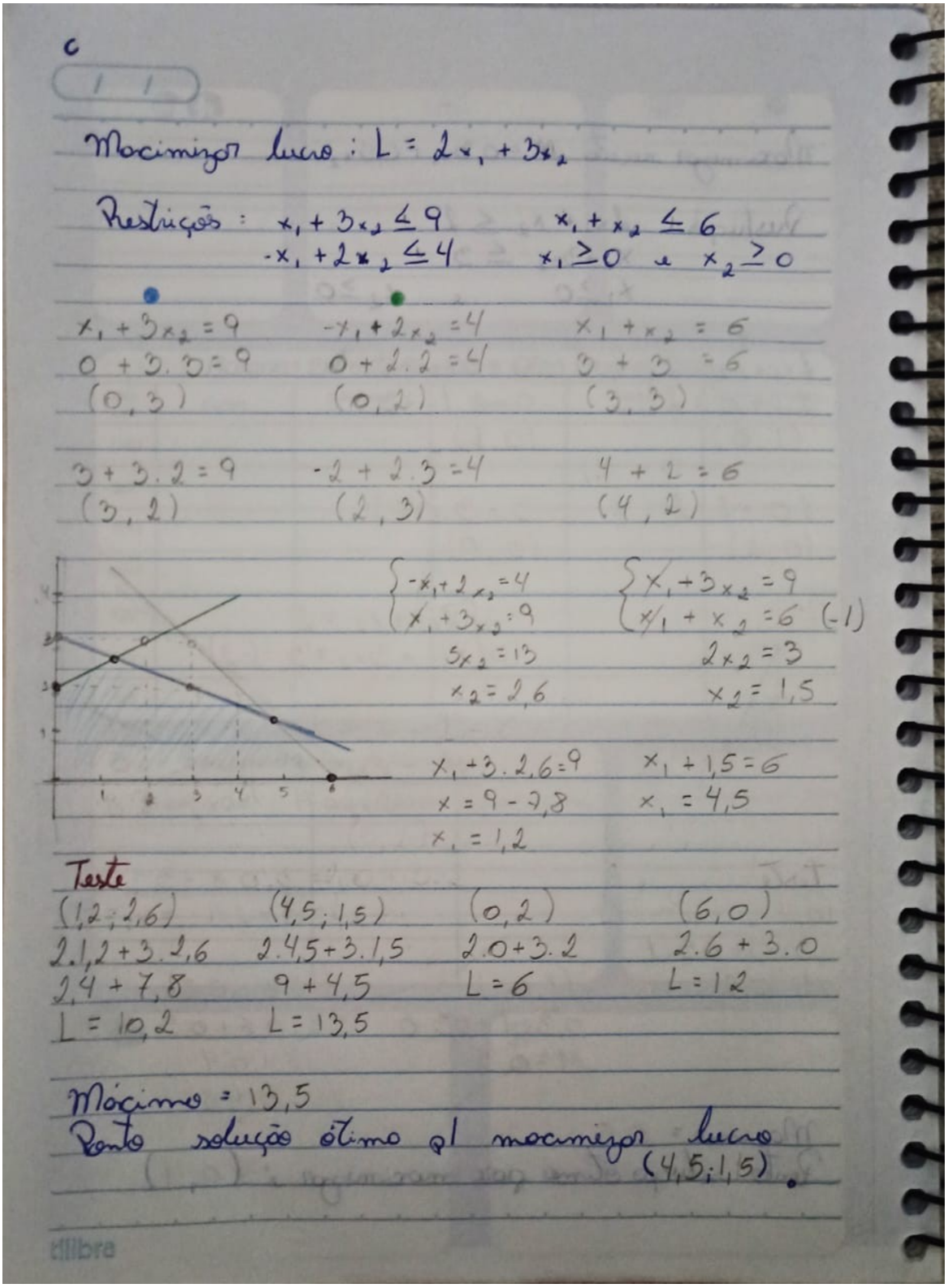
$0{,}18 + 0{,}4$

$M = 0{,}48$

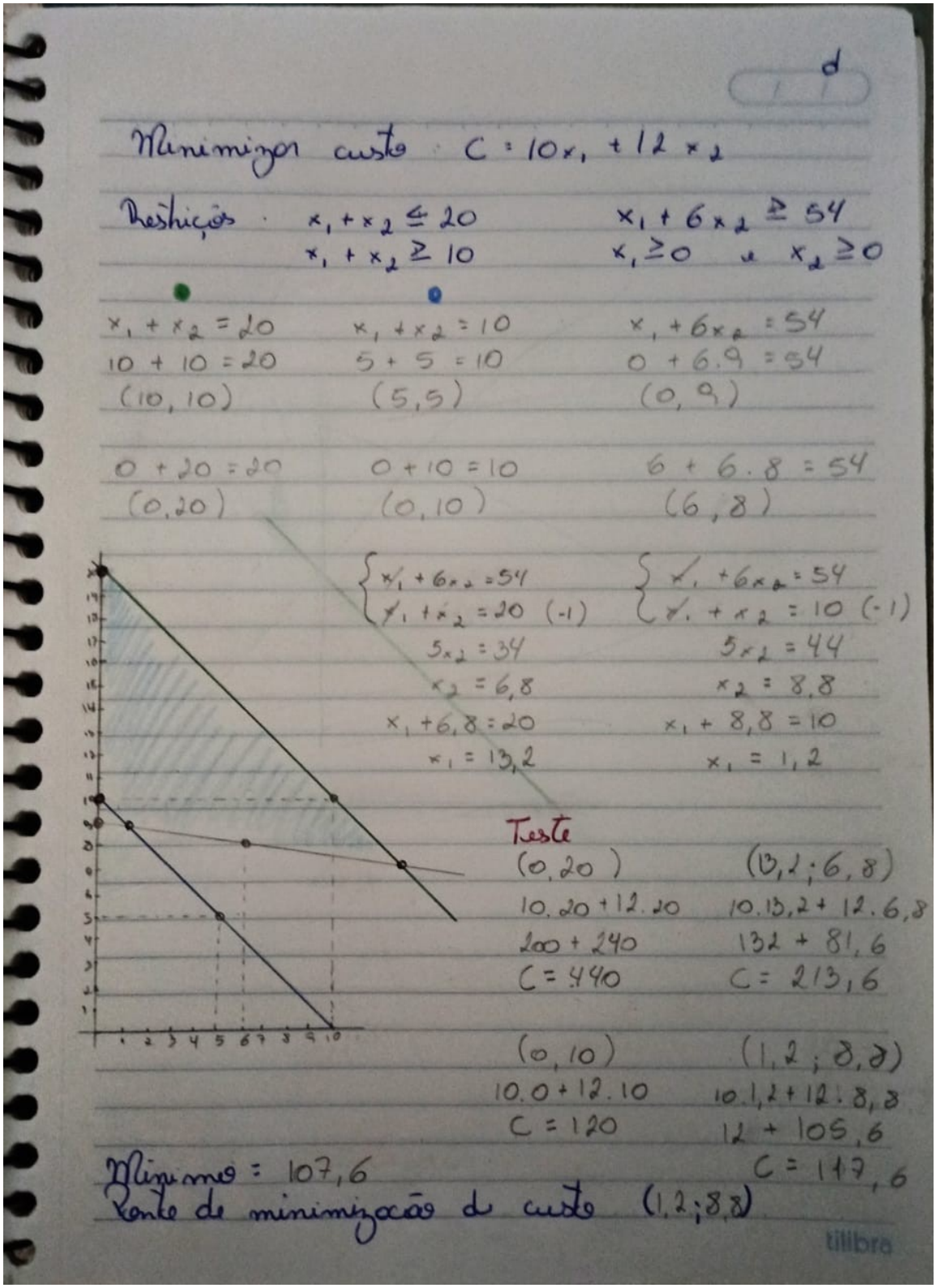
Máximo = 0,5

Ponto solução ótimo para maximizar: $(0, 1)$

Maximizar lucro: L=2 x1+3 x2, sujeito a x1+3 x2 ≤ 9, - x1+2 x2 ≤4, x1+ x2 ≤6, x1 ≥ 0, x2 ≥0



Minimizar custo: C=10 x1+12 x2 sujeito a x1+ x2 ≤ 20, x1+ x2>=10, x1+6 x2 ≥ 54, x1 ≥ 0, x2 ≥ 0



Minimizar: Z= 7 x1+ 9x_2 sujeito a – x1+x_2 ≤ 2, x1 ≤ 5, x_2 ≤ 6, 3x1+5x_2 ≥ 15, x1+4x_2 ≥ 20, x1 ≥ 0, x_2 ≥ 0