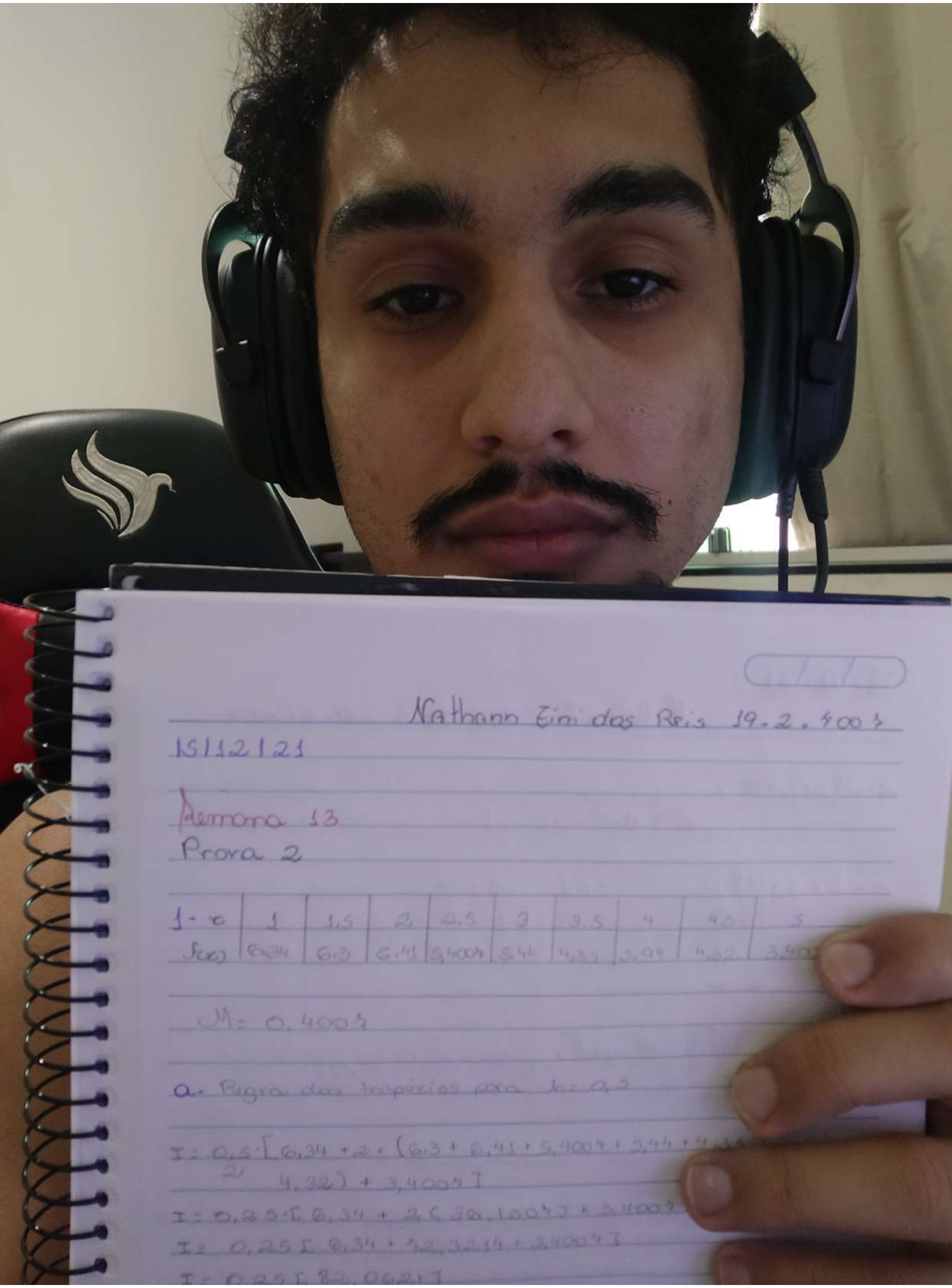

Nathann Eini das Reis 19.2.4003

15112121

Semana 13
Prova 2

1 - c	1	1,5	2	2,5	3	3,5	4	4,5	5
f(x)	6,34	6,3	6,41	5,4003	3,44	4,35	3,94	4,32	3,400

M = 0,4003

a. Regra dos trapézios para h = 0,5

I = $\frac{0,5}{2}$ [6,34 + 2 · (6,3 + 6,41 + 5,4003 + 3,44 + 4,35 + 3,94 + 4,32) + 3,4003]

I = 0,25 [6,34 + 2 (39,1003) + 3,4003]

I = 0,25 [6,34 + 78,2003 + 3,4003]

I = 0,25 [88,0603]

Nathann Eini dos Reis 19.2.4007

15112121

Semana 13

Prova 2

1 - x	1	1,5	2	2,5	3	3,5	4	4,5	5
f(x)	6,34	6,3	6,41	5,4007	5,44	4,35	3,94	4,32	3,4007

M = 0,4007

a- Regra dos trapézios para h = 0,5

$I = \frac{0,5}{2} \cdot [6,34 + 2 \cdot (6,3 + 6,41 + 5,4007 + 5,44 + 4,35 + 3,94 + \dots + 4,32) + 3,4007]$

$I = 0,25 \cdot [6,34 + 2(36,1607) + 3,4007]$

$I = 0,25 [6,34 + 72,3214 + 3,4007]$

$I = 0,25 [82,0621]$

$I = 20,5155$ //

b- $I = \frac{0,5}{3} [6,34 + 4 \cdot (6,3 + 5,4007 + 4,35 + 4,32) + 2(6,41 + \dots + 5,44 + 3,94) + 3,4007]$

$I = \frac{1}{6} [6,34 + 4 \cdot (20,3707) + 2 \cdot (15,79) + 3,4007]$

$I = \frac{1}{6} [6,34 + 81,8228 + 31,58 + 3,4007]$

$I = \frac{1}{6} \cdot [123,1435]$

$I = 20,5239$ //

15/12/21

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2- M = 0,4007

$x^3 + Mx^2 - 3x - 1$

a- $L = 1 + \sqrt[n-k]{\frac{M}{an}}$ $\quad k = 1 \quad M = 3$ $\quad an = 1 \quad n = 3$

limite Superior:

$L_{sup} = 1 + \sqrt[3-1]{\frac{3}{1}} \Rightarrow 1 + \sqrt{3}$ // ou 2,7320 //

limite Inferior:

$f(-x) = -x^3 + 0,4007(-x)^2 - 3(-x) - 1 = 0$

$= -x^3 + 0,4007x^2 + 3x - 1 = 0$

$f(-x) \cdot (-1) = x^3 - 0,4007x^2 - 3x + 1 = 0$

$L_{sup} = 1 + \sqrt[3-2]{\frac{3}{1}}$

$L_{sup} = 1 + 3 = 4$

Logo,

$L_{INF} = -L^+_{sup}$

$L_{INF} = -4$ //

tilibra

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b- Equação: $x^3 + 0,4007x^2 - 3x - 1$

$a = 1$; $b = 2$

Para o demonstrativo

$k = 0$

$ak = 1$ $f(ak) = 1^3 + 0,4007 \cdot 1^2 - 3 \cdot 1 - 1$

$= 0,4007 - 3$

$= -2,5993$

$bk = 2$ $f(bk) = 2^3 + 0,4007 \cdot 2^2 - 3 \cdot 2 - 1$

$= 8 + 1,6028 - 6 - 1$

$= 2,6028$

$$\bar{x} = \frac{(ak \cdot f(bk)) - (bk \cdot f(ak))}{f(bk) - (f(ak))}$$

$$\bar{x} = \frac{(1 \cdot 2,6028) - (2 \cdot (-2,5993))}{2,6028 + 2,5993}$$

$$\bar{x} = \frac{7,8014}{5,2021} = 1,4996$$

$f(\bar{x}k) = 1 \cdot 1,4996^3 + 0,4007 \cdot 1,4996^2 - 3 \cdot 1,4996 - 1$

$f(\bar{x}k) = 3,3723 + 0,9031 - 4,4988 - 1$

$f(\bar{x}k) = -1,2254$ ///

15/12/21

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Como foi visto no passo 0 demonstrativo anteriormente, os valores da tabela a seguir foram calculados de maneira análoga

k	ak	bk	$\bar{c}_k$	$\lvert f(\bar{c}_k)\rvert$	$f(a_k)\,f(x_k) < 0$?
0	1	2	1,4996	1,2251	(-) (-)
1	1,4996	2	1,6597	0,3029	(-) (-)
2	1,6597	2	1,6952	0,0622	(-) (-)
3	1,6952	2	1,7023	0,0123	(-) (-)
4	1,7023	2	1,7037	0,0024	(-) (-)

$k=1$; $\bar{c}_k = \frac{6,3531}{3,8279} = 1,6597$; $f(\bar{c}_k) = -0,3035$

$k=2$; $\bar{c}_k = \frac{4,9256}{2,9057} = 1,6952$; $f(\bar{c}_k) = -0,0622$

$k=3$; $\bar{c}_k = \frac{4,5367}{2,665} = 1,7023$; $f(\bar{c}_k) = -0,0123$

$k=4$; $\bar{c}_k = \frac{4,6763}{2,6150} = 1,7882$; $f(x) = -0,0024$