Trabalho Cálc. III Leonardo Rothier Soares Cardoso

1a QUESTÃO:

$x+y-5<0$ e $y>0$ e $x<0$

$x+y<5$

$x+y-5=0$

$y=-x+5$

$y=-0-5$

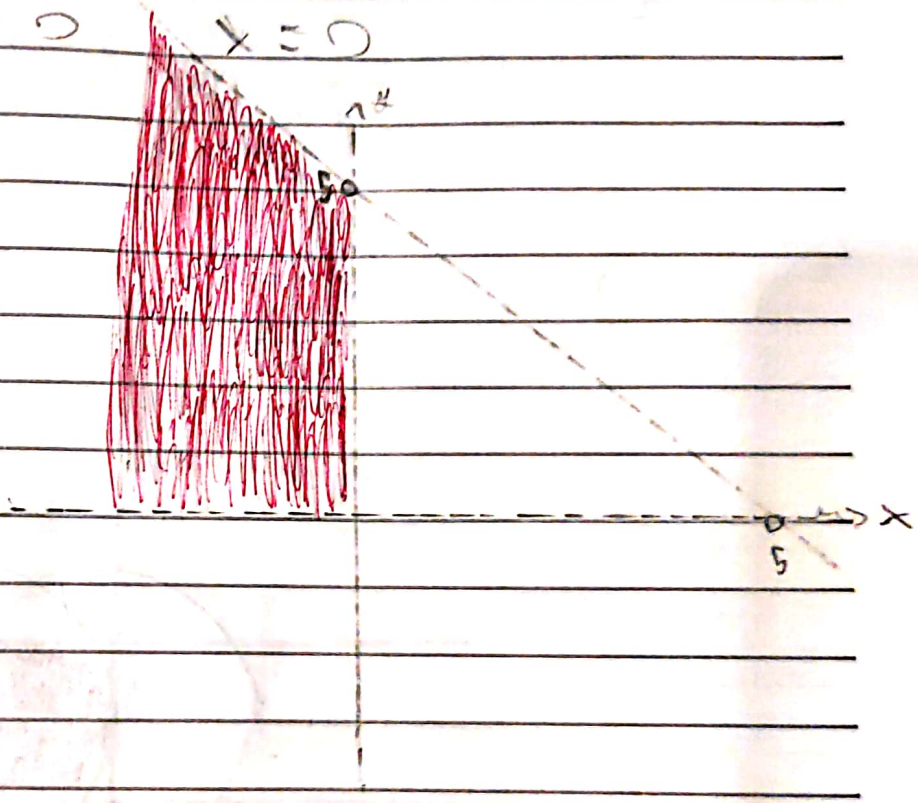
$0=-x+5$

$-x=-5$

$x=5$

$(0,5)$

$(5,0)$



2a Questão:

$x^2 + y^2 \leq 4$ e $x^2 + y^2 - 4x \leq 0$ e $y \leq 1$ e $y \geq -1$

$\frac{x^2}{4} + \frac{y^2}{4} = 1$, $x^2 - 4x + y^2 = 0$ $y = 1$ $y = -1$

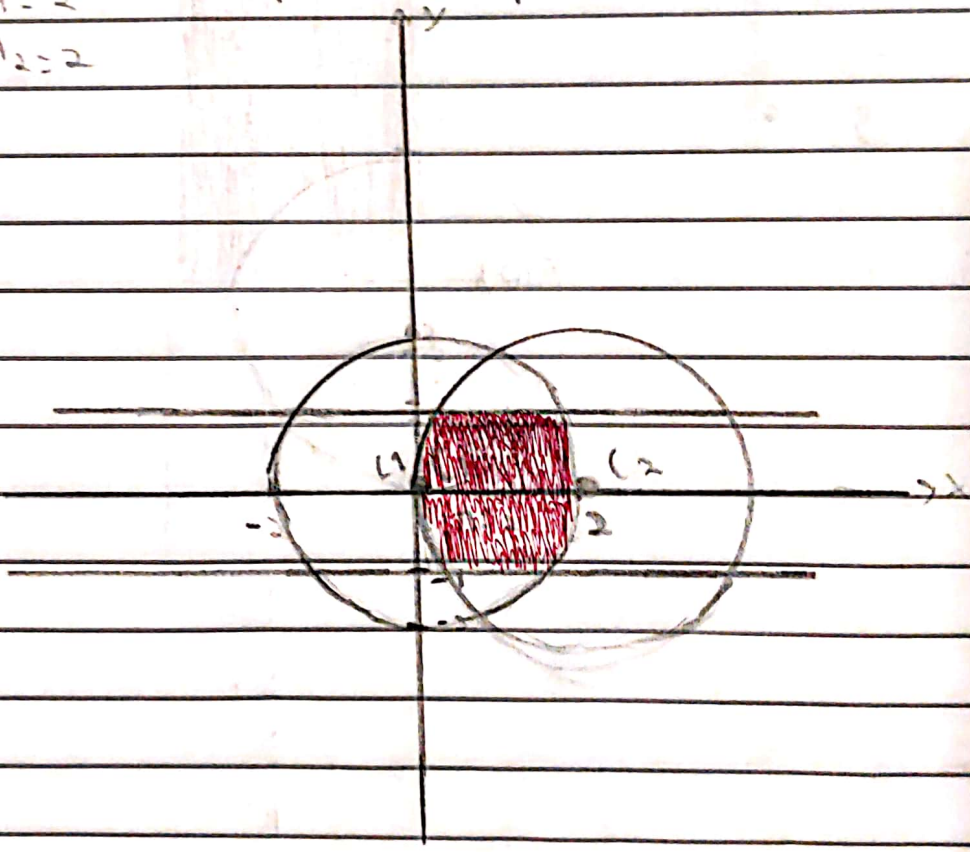
$(x^2 - 4x + (2)^2) + y^2 = 4$

$(x-2)^2 + y^2 = 4$

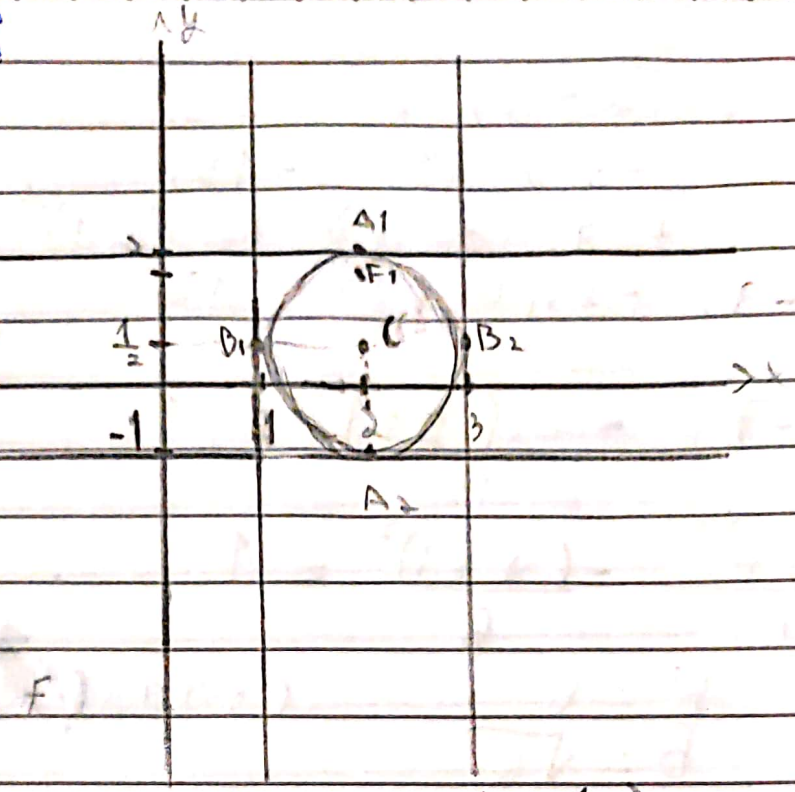
$\frac{(x-2)^2}{4} + \frac{y^2}{4} = 1$

$C_1(0,0)$ $r_1 = 2$

$C_2(2,0)$ $r_2 = 2$



3a Questão:



$2a = 3 \rightarrow a = \frac{3}{2}$ $\quad ((2, \frac{1}{2})$

$2b = 2 \quad b = 1$

$$\frac{(x-2)^2}{1} + \frac{(y-\frac{1}{2})^2}{9/4} = 1$$

Rel. Pitagórica:

$a^2 = b^2 + c^2$

$\frac{9}{4} = 1 + c^2$

$c^2 = \frac{9-4}{4} = \frac{5}{4}$

$c^2 = \frac{5}{4}$

$c = \frac{\sqrt{5}}{2}$

Pontos:

$A_1(2, 2)$

$A_2(2, -1)$

$B_1(1, \frac{1}{2})$

$B_2(3, \frac{1}{2})$

$((2, \frac{1}{2})$

$F_1(2, \frac{1}{2} + \sqrt{5}/2)$

$F_2(2, \frac{1}{2} + \sqrt{5}/2)$

4ª Questão:

$3x^2 - 2y^2 - 42x - 4y + 133 = 0$

$3x^2 - 42x - 2y^2 - 4y = -133$

$3.(x^2 - 14x + (7)^2) - 2.(y^2 + 2y + (1)^2) = -133 + 147 - 2$

$3.(x-7)^2 - 2.(y+1)^2 = 12$: 12

$\frac{3.(x-7)^2}{12} - \frac{2.(y+1)^2}{12} = \frac{12}{12}$

$\frac{(x-7)^2}{4} - \frac{(y+1)^2}{6} = 1$

$a^2 = 4 \quad b^2 = 6$ (centro (7, -1))

$a = 2 \quad b = \sqrt{6}$

$c = \sqrt{4+6}$

$= \sqrt{10}$

Pontos:

Centro (7, -1)

A1 (5, -1)

A2 (9, -1)

B1 (7, $-1-\sqrt{6}$)

B2 (7, $-1+\sqrt{6}$)

F1 ($7-\sqrt{10}$, -1)

F2 ($7+\sqrt{10}$, -1)