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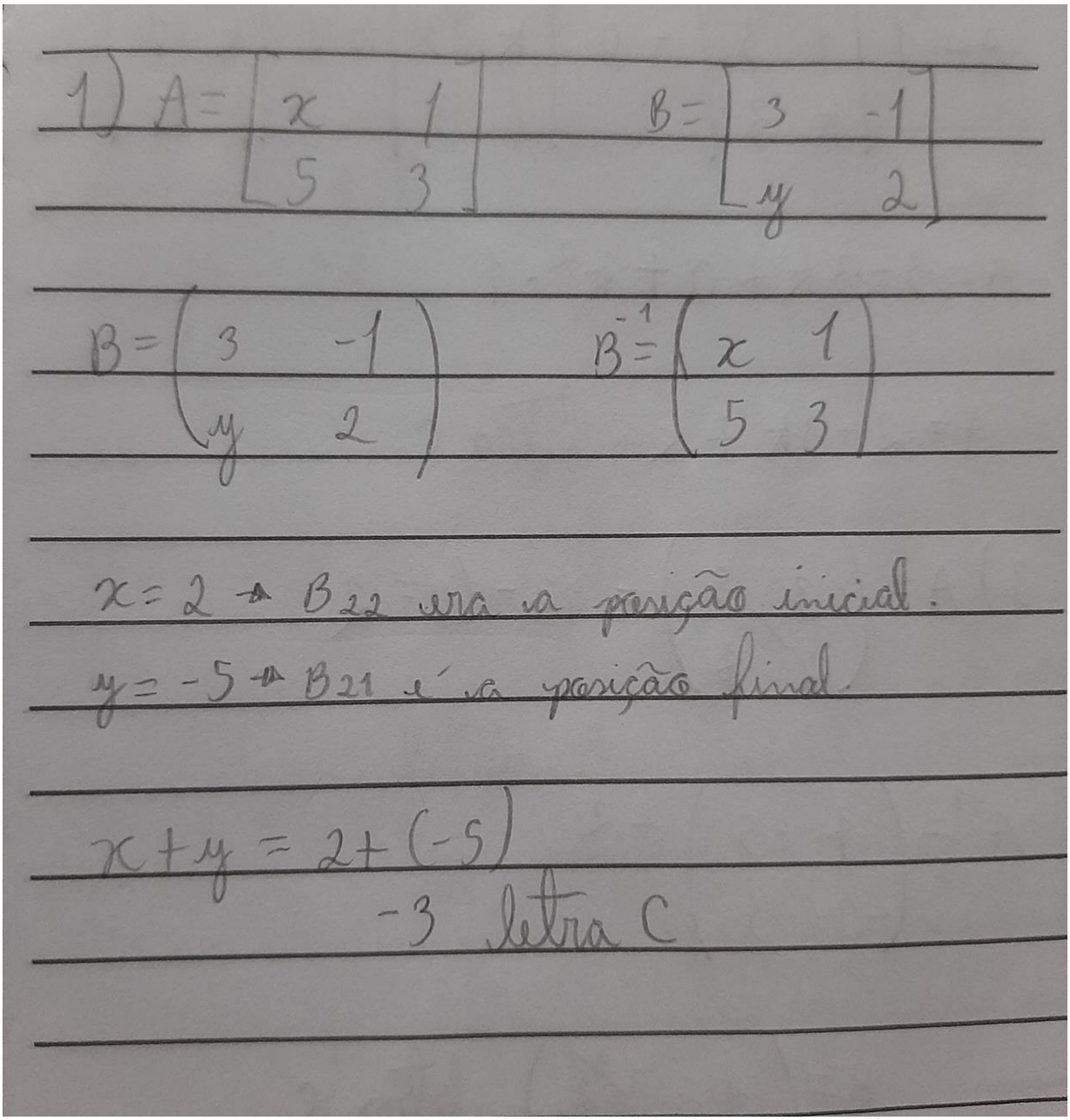
Sala: CTII 317



2) $A = \begin{vmatrix} 1 & 0 & 1 \\ k & 1 & 3 \\ 1 & k & 3 \end{vmatrix}$

$A = 1 \cdot \begin{vmatrix} 1 & 3 \\ k & 3 \end{vmatrix} - 0 \cdot \begin{vmatrix} k & 3 \\ 1 & 3 \end{vmatrix} + 1 \cdot \begin{vmatrix} k & 1 \\ 1 & k \end{vmatrix}$

$A = 3 - 3k + 0 + k^2 - 1$

$A = 2 - 3k + k^2$ letra C

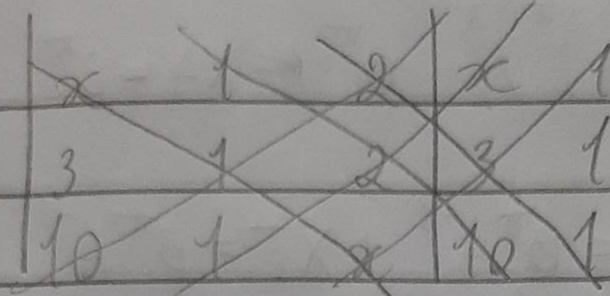
3) $A = \begin{pmatrix} 3 & 5 \\ 2 & 4 \end{pmatrix} = 12 - 10 = 2$

$A^{-1} = \begin{pmatrix} 4 & -5 \\ -2 & 3 \end{pmatrix} \div 2$

$B = \begin{pmatrix} 2 & -\frac{5}{2} \\ -1 & \frac{3}{2} \end{pmatrix}$ letra C

$20 + 2x + 3x = 20 + 5x$

4) $A =$



$1 = x^2 + 26 + 20 + 5x$

$x^2 + 20 + 6 = x^2 + 26$

$\Delta = x^2 - 5x + 6$

$\Delta = b^2 - 4.a.c$

$\Delta = (-5)^2 - 4.1.6$

$\Delta = 25 - 24$

$\Delta = 1$

$$x = \frac{-b \pm \sqrt{\Delta}}{2.a}$$

$$x = \frac{5 \pm \sqrt{1}}{2.1}$$

$$x = \frac{5 \pm 1}{2}$$

$x_1 = \frac{5+1}{2} = \frac{6}{2} = 3$

$x_2 = \frac{5-1}{2} = \frac{4}{2} = 2$

letra A

5) $2+2+2=6$

-1	-1	2	-1	1
2	1	-2	2	$1 = 7-6 = 1$
1	1	-1	1	1

$1+2+4 = 7x^2 - 26$

	-1	-1	2	1	0	0
1.	2	1	-2	0	1	0
	1	1	-1	0	0	1

→ adicionou pa linha 2 à linha 1

	1	0	0	1	1	0
(-1).	2	1	-2	0	1	0
+	1	1	-1	0	0	1

(-2)	1	0	0	1	1	0
+	2	1	-2	0	1	0
	-1	0	1	0	-1	-1

	1	0	0	1	1	0
+	0	1	-2	-2	-1	0
	-1	0	1	0	-1	-1

	1	0	0	1	1	0
	0	1	-2	-2	-1	0
(2)	0	0	1	1	0	1

	1	0	0	1	1	0
	0	1	0	0	-1	2
	0	0	1	1	0	1

$$\begin{vmatrix} -1 & -1 & 2 \\ 2 & 1 & -2 \\ 1 & 1 & -1 \end{vmatrix} + \begin{vmatrix} 1 & 1 & 0 \\ 0 & -1 & 2 \\ -1 & 0 & 1 \end{vmatrix}$$

$$\begin{vmatrix} 0 & 0 & 2 \\ 2 & 0 & 0 \\ 2 & 1 & 0 \end{vmatrix}$$ letra B

6) $((XA)^T)^t = B^t \rightarrow XA = B^t$

$XAA^{-1} = B^t A^{-1} \rightarrow XI = B^t A^{-1}$

$X = B^t A^{-1}$ letra B

7) $A = \begin{vmatrix} 4 & 5 \\ 5 & 6 \end{vmatrix} = 24 - 25 = -1$

24

$\begin{vmatrix} 6 & -5 \\ -5 & 4 \end{vmatrix} \div 1$

$\begin{vmatrix} -6 & 5 \\ 5 & -4 \end{vmatrix}$ letra D

8) $A = \begin{pmatrix} 2 & k \\ -2 & 1 \end{pmatrix}$

$\det A = 2 - (-2k)$

$\det A = 2 + 2k$

$\det A = \underline{1}$

$\det A$

$\det A^2 = 1$

$\det A = \sqrt{1}$

$\det A = \pm 1$

$2 + 2k = 1$

$2k = 1 - 2$

$k = \frac{-1}{2}$

$2 + 2k = -1$

$2k = -1 - 2$

$k = \frac{-3}{2}$

$\left(\frac{-1}{2}\right) + \left(\frac{-3}{2}\right) = \frac{-4}{2} = -2$

letra B

9) a) $(A+B)\cdot(A-B) = A^2 - AB + BA - B^2$

b) $(A+B)^2 = (A+B) = A^2 + AB + BA + B^2 =$

$\hookrightarrow A^2 + 2AB + B^2$

$AB = BA$

c) $\det(-A) = (-1)^2 \cdot \det A = \det A \neq 0$

$$\frac{\det(A)}{\det(-A)}$$

$$\frac{\det(A)}{\det(A)} = 1$$

d) $\det(AB) = 1$

$\det(A) \cdot \det(B) = 1$

$\det(B) = \frac{1}{\det A}$