

PROVA DE MATEMÁTICA DISCRETA

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Prova de Matemática Discreta

$$3) A = \{a, b, c, d\}, B = \{1, 4\}, C = [-3, 7]$$

3.1) Todos os elementos de $A: 4$

$$2) \text{ Todos os subconjuntos de } A: 2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$$

1°) \emptyset

$$2°) \{a\}, \{b\}, \{c\}, \{d\}$$

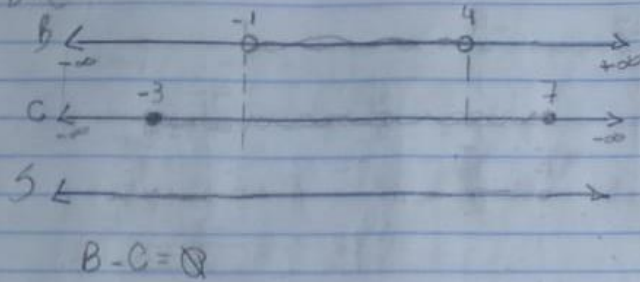
$$3°) \{a, b\}, \{b, c\}, \{a, c\}, \{a, d\}, \{b, d\}, \{c, d\}$$

$$4°) \{a, b, c\}, \{a, b, d\}, \{b, c, d\}, \{a, c, d\}$$

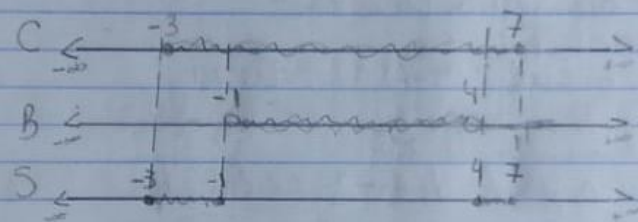
$$5°) \{a, b, c, d\}$$

$$P(A) = \{\emptyset, \{a\}, \{b\}, \{c\}, \{d\}, \{a, b\}, \{b, c\}, \{a, c\}, \{a, d\}, \{b, d\}, \{c, d\}, \{a, b, c\}, \{a, b, d\}, \{b, c, d\}, \{a, c, d\}, \{a, b, c, d\}\}$$

3.2) $B - C$



3.3) $C \cap B$

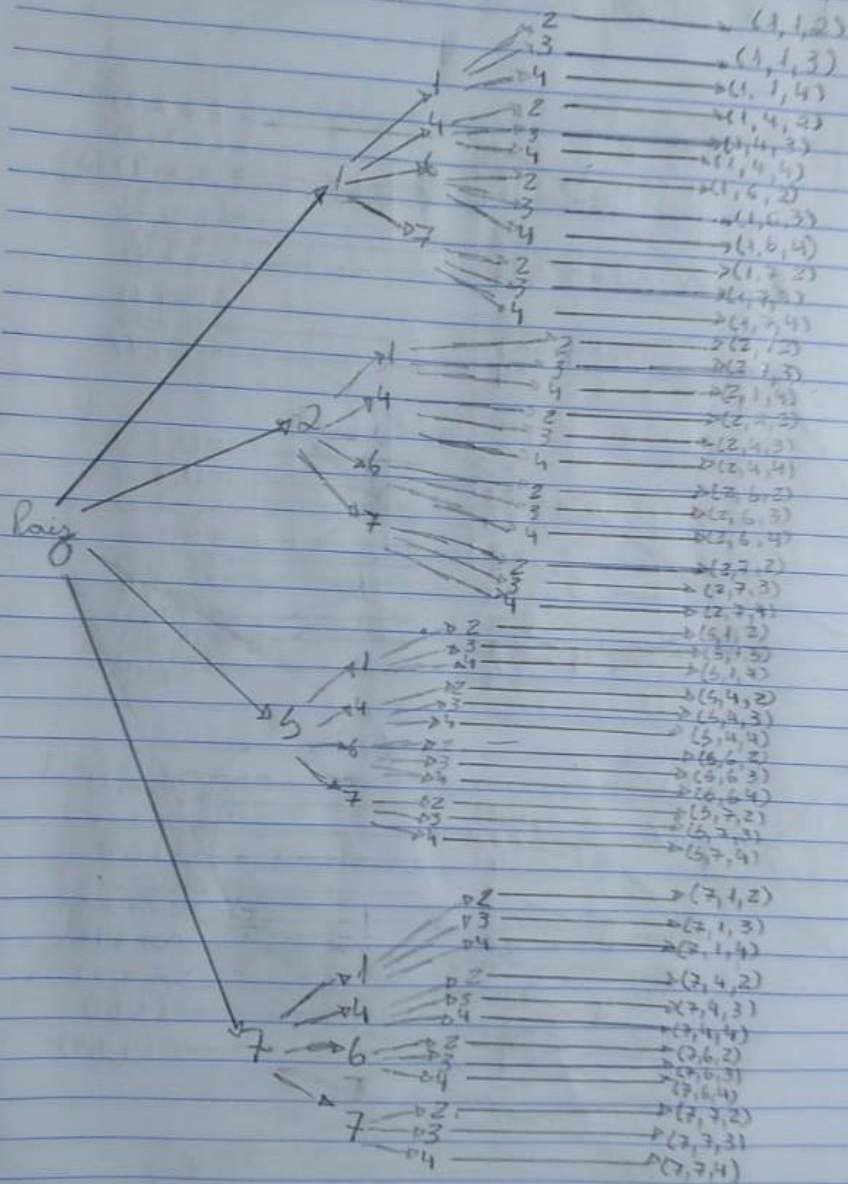


$$C \cap B = [-3, -1] \cup [4, 7] = \{x \in \mathbb{R} / -3 \leq x \leq -1\} \cup \{x / 4 \leq x \leq 7\}$$

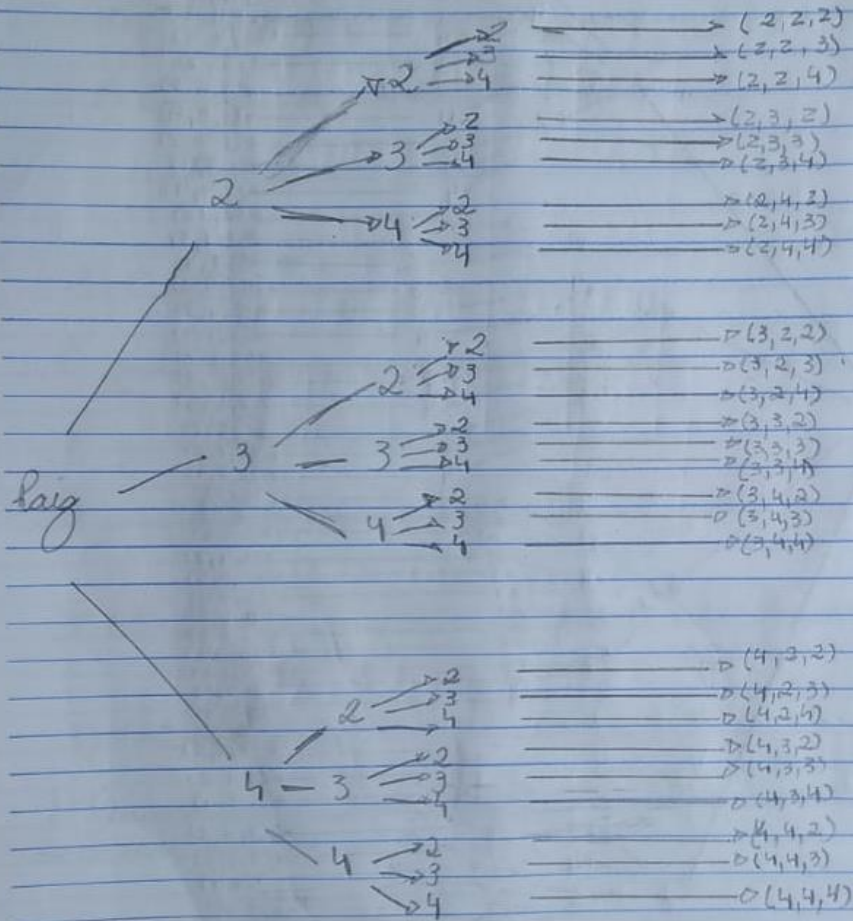
1) $A = \{1, 2, 5, 7, 9\}$, $B = \{2, 3, 4\}$, $C = \{1, 4, 6, 7\}$

1) Diagrama de arbori $A \times C \times B =$ Diagrama de arbori de B^3

1.1) $A \times C \times B$

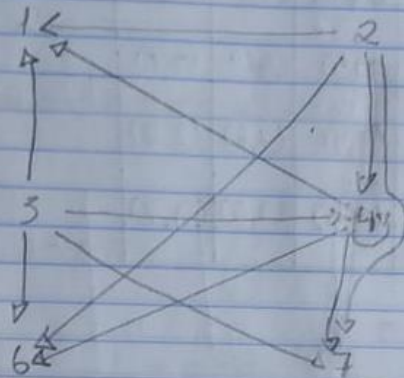


β^3

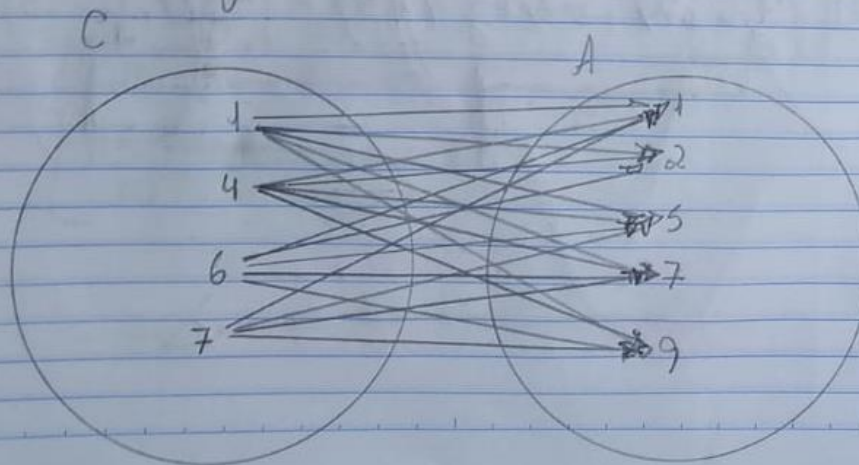


1.2) Diagrama digital BxC

$B \times C = \{(2,1), (2,4), (2,6), (2,7), (3,1), (3,4), (3,6), (3,7), (4,1), (4,4), (4,6), (4,7)\}$



1.3) Diagrama de termen de C x A



$$A = \{1, 2, 5, 7, 9\} \quad C = \{1, 4, 6, 7\}$$

1.4) Tabela de dupla entrada

A \ C	1	4	6	7
1	(1,1)	(1,4)	(1,6)	(1,7)
2	(2,1)	(2,4)	(2,6)	(2,7)
5	(5,1)	(5,4)	(5,6)	(5,7)
7	(7,1)	(7,4)	(7,6)	(7,7)
9	(9,1)	(9,4)	(9,6)	(9,7)

2) Pares ordenados "iguais"

$$1.) \left(\frac{1}{2}x + 7, -7 + \frac{3}{5}x + 3 \right) = \left(\frac{2x+7}{2}, \frac{1}{3}x - 5 \right)$$

$$-\frac{7}{1} + \frac{3}{5} = \frac{-32}{5}$$

$$\begin{array}{r} 32 \overline{) 12} \\ \underline{12} \\ 0 \end{array}$$

dat
fech
0
0

$$\left\{ \begin{array}{l} \frac{1}{2}x + 7y = 2y + 7 \end{array} \right.$$

$$\left\{ \begin{array}{l} -7y + \frac{3}{5}y + 3 = \frac{1}{3}x - 5 \end{array} \right.$$

$$2^{\circ}) \left\{ \begin{array}{l} \frac{1}{2}x + 7y - 2y = 7 \end{array} \right.$$

$$\left\{ \begin{array}{l} 7y + \frac{3}{5}y - \frac{1}{3}x = -3 - 5 \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{1}{2}x + 5y = 7 \quad \left(\frac{1}{3} \right) \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{-32}{5}y - \frac{1}{3}x = -8 \quad \left(\frac{1}{2} \right) \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{1}{6}x + \frac{5}{3}y = \frac{7}{3} \end{array} \right.$$

$$\left\{ \begin{array}{l} \frac{-32}{10}y - \frac{1}{6}x = \frac{-8}{2} = -4 \end{array} \right.$$

$$\begin{aligned} \frac{1}{6}x + \frac{5}{3}y &= \frac{7}{3} \\ -\frac{1}{6}x - \frac{16}{5}y &= -4 \end{aligned}$$

$$\frac{5}{3}y - \frac{16}{5}y = \frac{7}{3} - \frac{4}{1}$$

$$\frac{25y}{15} - \frac{48y}{15} = \frac{35}{15} - \frac{6}{15}$$

$$-23y = 29$$

$$-y = \frac{29}{23}$$

$$y = -\frac{29}{23}$$

$$x = 1$$

$$\begin{array}{r|l} 3 & 53,1 \\ 1,3 & 1,1 \\ 1,1,1 & 1 \\ \hline & 5 \\ & 15 \end{array}$$

$$\begin{array}{r} 32 \\ \times 7 \\ \hline 224 \end{array}$$

$$\begin{array}{r} 32 \\ \times 5 \\ \hline 160 \end{array}$$

data
fecha

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

$$\begin{cases} \frac{1}{2}x + 5y = 7 & \frac{32}{5} \\ -\frac{32}{5} + -\frac{1}{3}x = -8 & \frac{6}{1} \end{cases}$$

$$\begin{cases} \frac{32}{10}x + \frac{160}{5}y = \frac{224}{5} \\ -\frac{5}{3}x - \frac{160}{5}y = -40 \end{cases}$$

$$\frac{16}{5}x - \frac{5}{3}x = \frac{224}{5} - \frac{40}{1}$$

w m c
3, 5, 5
1, 1, 1

3
5
15

$$\frac{48x}{15} - \frac{25x}{15} = \frac{672}{15} - \frac{600}{15}$$

$$48x - 25x = 672 - 600$$

$$23x = 72$$

$$x = \frac{72}{23}$$

4) Diagrama cartesiano

4.1) $y < 2 \cdot \cos(x)$ e $y \geq -3 \cdot \sin(x)$, para $x \in [-2\pi, +2\pi]$

cos

x	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$y = \cos(x)$	1	0	-1	0	1
$y = 2 \cdot \cos(x)$	$2 \cdot 1 = 2$	$2 \cdot 0 = 0$	$2 \cdot (-1) = -2$	$2 \cdot 0 = 0$	$2 \cdot 1 = 2$
(x, y)	$(0, 2)$	$(\frac{\pi}{2}, 0)$	$(\pi, -2)$	$(\frac{3\pi}{2}, 0)$	$(2\pi, 2)$

sen

x	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$y = \sin(x)$	0	1	0	-1	0
$y = -3 \cdot \sin(x)$	$-3 \cdot 0 = 0$	$-3 \cdot 1 = -3$	$-3 \cdot 0 = 0$	$-3 \cdot (-1) = 3$	$-3 \cdot 0 = 0$
(x, y)	$(0, 0)$	$(\frac{\pi}{2}, -3)$	$(\pi, 0)$	$(\frac{3\pi}{2}, 3)$	$(2\pi, 0)$

