

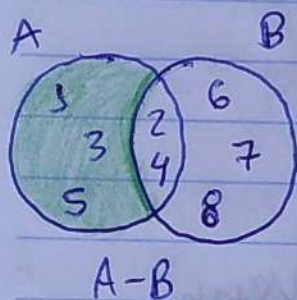
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pag 1

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 Prof<sup>a</sup> Marisa Atsuko Nitto - Matemática I - 1º ADS  
 Lista de Exercícios - Aula 19

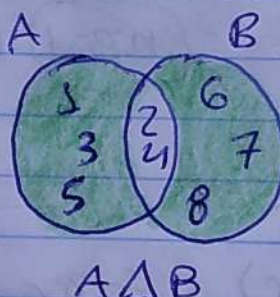
1.1) Sejam os conjuntos  $A = \{1, 2, 3, 4, 5\}$ ,  $B = \{2, 4, 6, 7, 8\}$  e  $C = \{1, 6, 9, 10\}$ , determinar as operações e fazer o diagrama de Venn.

1.1.1)  $A - B$



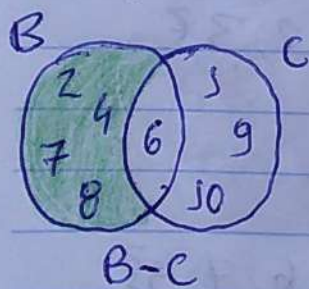
\*Portanto:  
 $A - B = \{1, 3, 5\}$

1.1.2)  $A \Delta B$

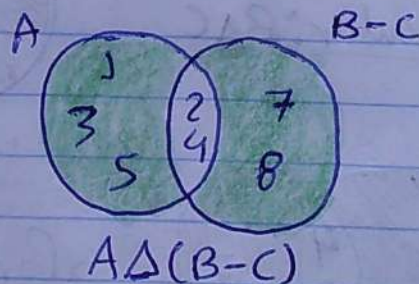


\*Portanto:  
 $A \Delta B = \{1, 3, 5, 6, 7, 8\}$

1.1.3)  $A \Delta (B - C)$

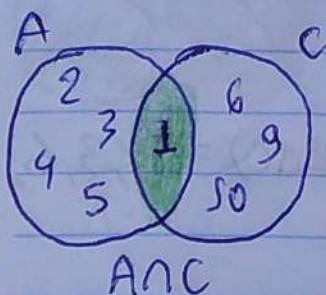


\*Portanto:  
 $B - C = \{2, 4, 7, 8\}$

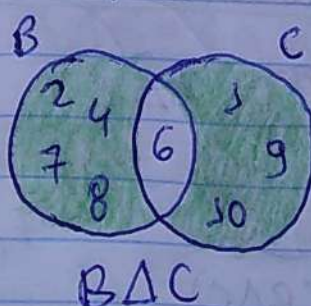


\*Portanto:  
 $A \Delta (B - C) = \{1, 3, 5, 7, 8\}$

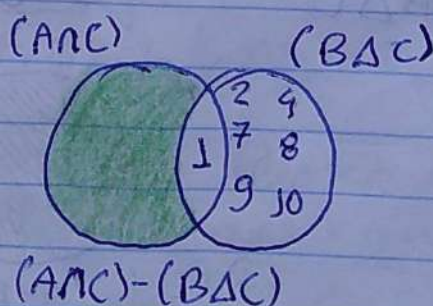
1.1.4)  $(A \cap C) - (B \Delta C)$



$A \cap C = \{1\}$



$B \Delta C = \{1, 2, 4, 7, 8, 9, 10\}$

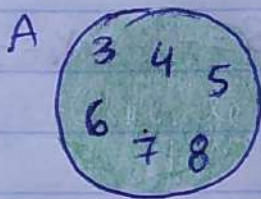


\*Portanto:  
 $(A \cap C) - (B \Delta C) = \{\emptyset\}$

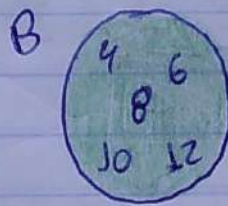


2) Dados os conjuntos  $A = \{3, 4, 5, 6, 7, 8\}$ ,  $B = \{4, 6, 8, 10, 12\}$  e  $C = \{1, 2, 3, 4, 6, 10\}$ , determinar a operação e fazer diagrama de Venn:

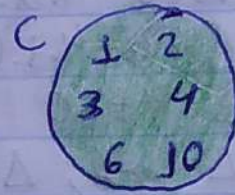
2.1) Conjunto A  
 $A = \{3, 4, 5, 6, 7, 8\}$



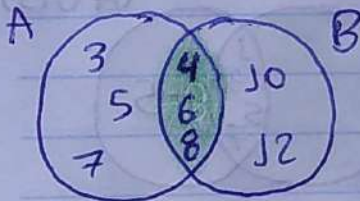
2.2) Conjunto B  
 $B = \{4, 6, 8, 10, 12\}$



2.3) Conjunto C  
 $C = \{1, 2, 3, 4, 6, 10\}$



2.4)  $A \cap B$

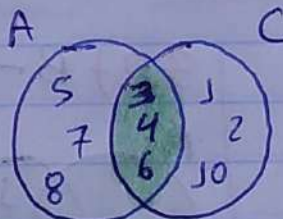


$A \cap B$

Portanto:  $A \cap B = \{4, 6, 8\}$

~~$A \cap B$~~

2.5)  $A \cap C$

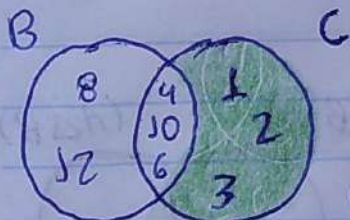


$A \cap C$

Portanto

$A \cap C = \{3, 4, 6\}$

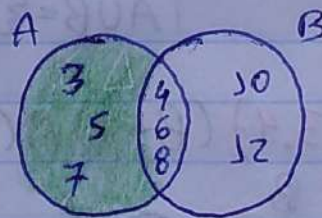
2.6)  $C - B$



$C - B$

Portanto  
 $C - B = \{1, 2, 3\}$

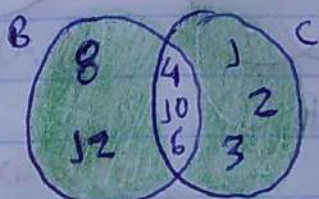
2.7)  $A - B$



$A - B$

Portanto  
 $A - B = \{3, 5, 7\}$

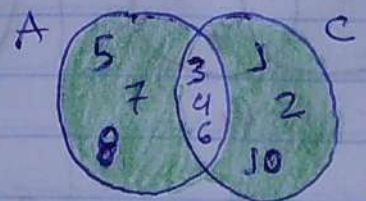
2.8)  $B \Delta C$



$B \Delta C$

Portanto:  
 $B \Delta C = \{1, 2, 3, 8, 10\}$

2.9)  $A \Delta C$



$A \Delta C$

Portanto:  
 $A \Delta C = \{1, 2, 5, 7, 8, 10\}$



3) Dados os conjuntos  $A = \{x \in \mathbb{R} / x^2 + 2x - 15 = 0\}$  e  $B = \{1, 3, 5, 7\}$  determinar as operações e fazer o diagrama de Venn para:

$$x^2 + 2x - 15 = 0$$

$a = 1$   
 $b = 2$   
 $c = -15$

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

$$\Delta = 2^2 - 4 \cdot 1 \cdot (-15)$$

$$\Delta = 4 + 60$$

$$\Delta = 64, \Delta > 0$$

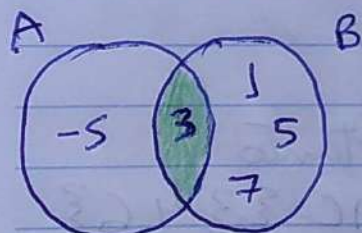
$$x = \frac{-b \pm \sqrt{\Delta}}{2 \cdot a} \Rightarrow x = \frac{-2 \pm \sqrt{64}}{2 \cdot 1}$$

$$x = \frac{-2 \pm 8}{2} \rightarrow x_1 = \frac{-2 - 8}{2} = \frac{-10}{2} \Rightarrow x_1 = -5,$$

$$x_2 = \frac{-2 + 8}{2} = \frac{6}{2} \Rightarrow x_2 = 3$$

$$A = \{-5, 3\}$$

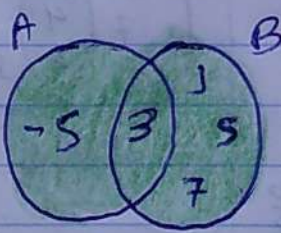
3.1)  $A \cap B$



$A \cap B$

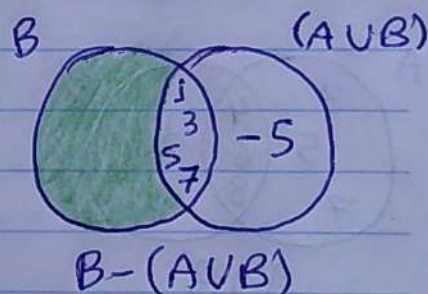
\*Portanto  $A \cap B = \{3\}$

3.2)  $B - (A \cup B)$



$A \cup B$

$A \cup B = \{1, 3, 5, 7, -5\}$

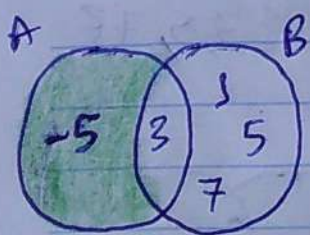


$B - (A \cup B)$

\*Portanto:

$B - (A \cup B) = \{\emptyset\}$

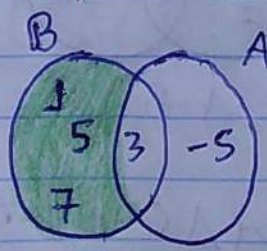
3.3)  $A - B$



$A - B$

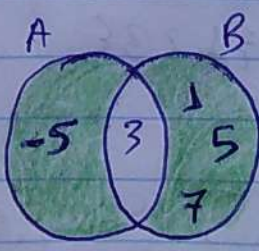
\*Portanto  
 $A - B = \{-5\}$

3.4)  $(B - A) \cap (A \Delta B)$



$B - A$

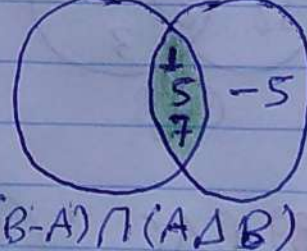
$B - A = \{1, 5, 7\}$



$A \Delta B$

$A \Delta B = \{1, 5, 7, -5\}$

$(B - A) \cap (A \Delta B)$



$(B - A) \cap (A \Delta B)$

\*Portanto

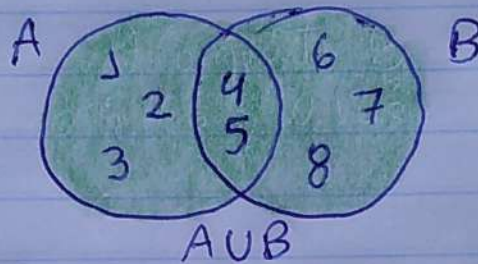
$(B - A) \cap (A \Delta B) = \{1, 5, 7\}$



pg 4

4) Considere que  $A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8\}$ ,  $A \cap B = \{4, 5\}$  e  $A - B = \{1, 2, 3\}$ , determine os elementos dos conjuntos A e B.

\* Diagrama de Venn:



\* Conjunto

$$A = \{1, 2, 3, 4, 5\}$$

\* Conjunto

$$B = \{4, 5, 6, 7, 8\}$$

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