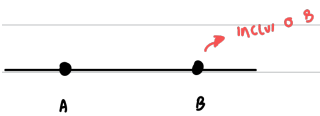
Intervalos Reais

Os intervalos reais são subconjuntos de $\mathbb{R}$. Dados dois números reais $A \in B$ com $A < B$, temos os seguintes intervalos

I. Intervalos Limitados



Intervalo : $[A, B]$

Significado: colchetes

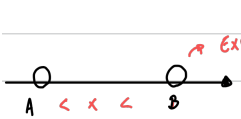
- $[$ → Inclusão $<$ Excluído
- $]$ → Exclusão $\leq$ Incluído

Conjunto : $\{ x \in \mathbb{R} \mid A \leq x \leq B \}$

Intervalo : $[A, B]$

Conjunto : $\{ x \in \mathbb{R} \mid -1 \leq x \leq 5 \}$

II. Intervalo Aberto



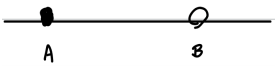
Intervalo : $]A, B[$

Conjunto : $\{ x \in \mathbb{R} \mid A < x < B \}$

Intervalo : $]-1, 5[$

Conjunto : $\{ x \in \mathbb{R} \mid -1 < x < 5 \}$

III. Intervalo Fechado à Esquerda



Intervalo : $[A, B[$

Conjunto : $\{x \in \mathbb{R} / A \leq x < B\}$

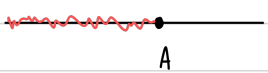
Intervalo : $[-1, 5[$

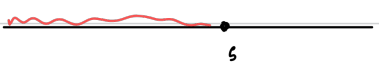
Conjunto : $\{x \in \mathbb{R} / -1 \leq x < 5\}$

IV. Intervalo Ilimitados

1. Conjunto : $\{x \in \mathbb{R} / x \leq A\}$

Intervalo : $]-\infty, A]$





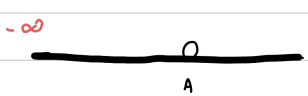
Conjunto : $\{x \in \mathbb{R} / x \leq 5\}$

Intervalo : $]-\infty, 5]$

Exemplo 2

Conjunto : $\{x \in \mathbb{R} / x < A\}$

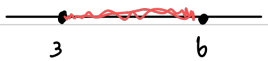
Intervalo : $]-\infty, A[$



Exercícios

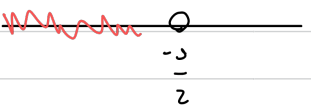
A) $[3,6[$

$S = \{ x \in \mathbb{R} \mid 3 \leq x < 6 \}$



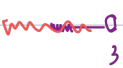
B) $]-\infty, -\frac{1}{2}[$

$S = \{ x \in \mathbb{R} \mid x < -\frac{1}{2} \}$



C) $\{ x \in \mathbb{R} \mid x < 3 \}$

$]-\infty, 3[$



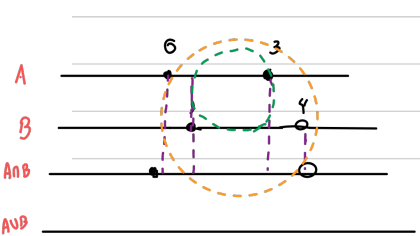
Utilizando a representação dos intervalos sobre a reta real, determine $A \cap B$ e $A \cup B$, sendo $A = \{0,3\}$ e $B = \{ x \in \mathbb{R} \mid 1 \leq x < 4 \}$

$S = \{ x \in \mathbb{R} \mid 1 \leq x \leq 3 \}$

$S = [1,3]$

$S = [0,4[$

$S = \{ x \in \mathbb{R} \mid 0 \leq x \leq 4 \}$



Intersecção

União