

## Exercícios – Aula 1

1)

Relacione usando  $\in$  ou  $\notin$  :



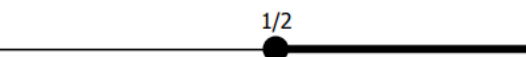
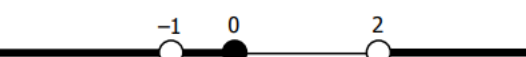
- |   |   |  |   |
|---|---|--|---|
| a) $-5 \dots\dots\dots \mathbb{N}$          | e) $\frac{4}{11} \dots\dots\dots \mathbb{R}-\mathbb{Q}$ | i) $-1 \dots\dots\dots \mathbb{R}$             | n) $\sqrt{361} \dots\dots\dots \mathbb{I}_r$            |
| b) $\frac{2}{3} \dots\dots\dots \mathbb{Z}$ | f) $\sqrt{-9} \dots\dots\dots \mathbb{R}$               | j) $\frac{108}{9} \dots\dots\dots \mathbb{N}$  | o) $(2,33\dots \times 9) \dots\dots\dots \mathbb{N}$    |
| c) $\sqrt{5} \dots\dots\dots \mathbb{R}$    | g) $-13 \dots\dots\dots \mathbb{Q}$                     | l) $0 \dots\dots\dots \mathbb{Z}_+$            | p) $\frac{\sqrt[3]{-64}}{2} \dots\dots\dots \mathbb{Z}$ |
| d) $4 \dots\dots\dots \mathbb{Q}$           | h) $\sqrt{0} \dots\dots\dots \mathbb{R}$                | m) $-\frac{4}{2} \dots\dots\dots \mathbb{Q}^*$ | q) $0,127 \dots\dots\dots \mathbb{Q}^*$                 |

2)

Os conjuntos  $A = \{x \in \mathbb{N} \mid 2 \leq x < 4\}$  e  $B = \{x \in \mathbb{R} \mid 2 \leq x < 4\}$  são iguais?

3)

Dados os intervalos abaixo, escreva-os em notação de conjunto:

- a)   $\rightarrow \{ \dots\dots\dots \}$
- b)   $\rightarrow \{ \dots\dots\dots \}$
- c)   $\rightarrow \{ \dots\dots\dots \}$
- d)   $\rightarrow \{ \dots\dots\dots \}$

4)

Dados os conjuntos  $B = \{x \in \mathbb{R} \mid -3 \leq x < 1\}$  e  $M = \{x \in \mathbb{R} \mid 1 < x < 2\}$ , calcule  $B \cup M$ .

B \_\_\_\_\_

M \_\_\_\_\_

$B \cup M$  \_\_\_\_\_

5)

Considerando os conjuntos  $A = \{x \in \mathbb{R} \mid -2 \leq x < 1\}$  e  $B = [0, 6[$ , determine  $A \cap B$ .

A \_\_\_\_\_

B \_\_\_\_\_

$A \cap B$  \_\_\_\_\_

6)

Admitindo-se os conjuntos  $B = ]-\infty, \sqrt{2}[$  e  $C = \{x \in \mathbb{R} \mid x > 1\}$ , obtenha  $B - C$ .

B \_\_\_\_\_

C \_\_\_\_\_

$B - C$  \_\_\_\_\_

7)

Dados os conjuntos:  $A = ]-\infty, -1]$ ,  $B = \{x \in \mathbb{R} \mid -3 < x < 2\}$ ,  $C = \{x \in \mathbb{R} \mid x \geq 2\}$  e  $D = ]-2, 3]$ , obtenha o conjunto  $[(A \cap B) \cup C] - D$ .

A \_\_\_\_\_  
 B \_\_\_\_\_  
 $A \cap B$  \_\_\_\_\_  
 C \_\_\_\_\_  
 $(A \cap B) \cup C$  \_\_\_\_\_  
 D \_\_\_\_\_  
 $[(A \cap B) \cup C] - D$  \_\_\_\_\_

8)

Encontre o valor das seguintes expressões numéricas:

**a)**  $10 + \{2 - [16 \div 2 + 3 \cdot (4 + 5) - 7]\}$

**b)**  $27 + 3 \cdot 8 \div 4 - 3 \cdot 4 + (5 - 7) \cdot 5$

9)

Determine o valor das expressões a seguir, simplificando (se possível) a solução encontrada.

**a)**  $\frac{6}{11} - 1 + \left(1 - \frac{15}{22}\right) - \left(3 + \frac{1}{4}\right) =$

**f)**  $\frac{\frac{1}{2} - \frac{1}{3}}{\frac{5}{6}} =$

**b)**  $3 \cdot \left[\left(\frac{1}{2} - \frac{1}{5}\right) - \left(-\frac{1}{6} + \frac{1}{10}\right)\right] =$

**g)**  $\left[1 - \left(\frac{5}{18} - \frac{1}{6}\right)\right] \div \left(\frac{16}{9}\right) =$

**c)**  $7 : \left(-\frac{7}{5}\right) - (-8) : \left(-\frac{2}{5}\right) =$

**h)**  $10 + \left\{\left[\left(\frac{2}{5} + \frac{1}{2}\right) \cdot \frac{10}{9}\right] - 2\right\} - \frac{1}{2} =$

**d)**  $\frac{11}{2} \cdot \left[\left(-\frac{7}{6}\right) \div \left(-\frac{14}{3}\right) - \frac{11}{4}\right] =$

**i)**  $9 \cdot \left(\frac{3 - \frac{1}{3}}{14 - \frac{1}{2}}\right) - 1 =$

**e)**  $\left(\frac{-\frac{1}{6} - \frac{7}{15}}{-\frac{95}{20}}\right) + \frac{7}{15} =$

**j)**  $\frac{\frac{2}{11} \cdot \left[2 \cdot \left(-\frac{7}{6}\right) + \left(\frac{1}{3}\right) - 3\right]}{2} =$