

Lista complementar de exercícios de Matemática

Conteúdos: Intervalos e operações com intervalos.

1) Represente os intervalos graficamente na reta real.

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

h) $(-\infty, -1]$

b) $\{a \in \mathbb{R} \mid a \geq -2\}$

i) $[0, 1]$

c) $\{p \in \mathbb{R} \mid p > \pi\}$

j) $(\sqrt{2}, 7]$

d) $\{x \in \mathbb{R} \mid -1 \leq x < \sqrt{5}\}$

k) $[-7, \infty)$

e) $\{t \in \mathbb{R} \mid -\frac{2}{5} < t \leq 7\}$

l) $[-\pi, 3]$

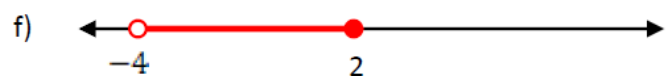
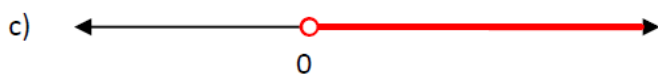
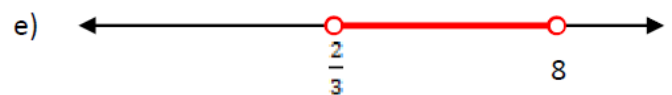
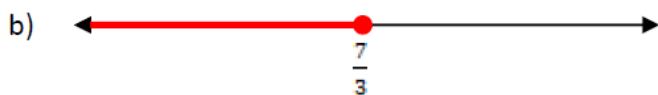
f) $\{x \in \mathbb{R} \mid 0 < x < 1\}$

m) $(4, \infty)$

g) $\{x \in \mathbb{R} \mid \frac{4}{11} \leq x \leq \frac{1}{2}\}$

n) $(-\infty, \infty)$

2) Escreva os intervalos que estão representados abaixo, utilizando duas notações diferentes:



3) Determine $A \cap B$, quando:

a) $A = \{x \in \mathbb{R} \mid -1 \leq x \leq 2\}$ e
 $B = \{x \in \mathbb{R} \mid 0 \leq x \leq 5\}$

4) Determine $A \cup B$, quando:

a) $A = \{x \in \mathbb{R} \mid 0 < x < 3\}$ e
 $B = \{x \in \mathbb{R} \mid 1 < x < 5\}$

b) $A = \{x \in \mathbb{R} \mid x < 3\}$ e
 $B = \{x \in \mathbb{R} \mid 1 \leq x \leq 4\}$

b) $A = \{x \in \mathbb{R} \mid -4 < x \leq 1\}$ e
 $B = \{x \in \mathbb{R} \mid 2 \leq x \leq 3\}$

c) $A = \{x \in \mathbb{R} \mid -3 \leq x < 1\}$ e
 $B = \{x \in \mathbb{R} \mid 0 \leq x \leq 3\}$

c) $A = \{x \in \mathbb{R} \mid 2 < x < 5\}$ e
 $B = \{x \in \mathbb{R} \mid 1 < x < 4\}$

d) $A = \{x \in \mathbb{R} \mid x < 5\}$ e
 $B = \{x \in \mathbb{R} \mid x > 5\}$

d) $A = \{x \in \mathbb{R} \mid -2 \leq x \leq 2\}$ e
 $B = \{x \in \mathbb{R} \mid x \geq 0\}$

5) Dados $A = [2, 7]$, $B = [-1, 5]$ e $E = [3, 9]$, calcule:

a) $A - B$

c) $A - E$

b) $B - A$

d) $E - B$

6) Sejam os conjuntos $A = [-1, 6)$, $B = (-4, 2]$ e $E = (-2, 4)$, calcule:

a) $(B \cup E) - A$

b) $E - (A \cap B)$

Respostas

2) a) $[-3,5]$

d) $[-\pi, 4)$ ou $[-\pi, 4[$

b) $(-\infty, \frac{7}{3}]$ ou $]-\infty, \frac{7}{3}]$

e) $(\frac{2}{3}, 8)$ ou $]\frac{2}{3}, 8[$

c) $(0, +\infty)$ ou $]0, +\infty[$

f) $(-4, 2]$ ou $]-4, 2]$

3) a) $[0, 2]$

c) $(0, 1)$ ou $]0, 1[$

b) $[1, 3)$ ou $[1, 3[$

d) \emptyset

4) a) $(0, 5)$ ou $]0, 5[$

c) $(1, 5)$ ou $]1, 5[$

b) $(-4, 1] \cup [2, 3]$ ou $]-4, 1] \cup [2, 3]$

d) $[-2, +\infty)$ ou $[-2, +\infty[$

5) a) $(5, 7]$ ou $]5, 7]$

c) $[2, 3)$ ou $[2, 3[$

b) $[-1, 2)$ ou $[-1, 2[$

d) $(5, 9)$ ou $]5, 9[$

6) a) $(-4, -1)$ ou $]-4, -1[$

b) $(-4, -1) \cup (2, 4)$ ou $]-4, -1[\cup]2, 4[$