

CURSO MENTOR

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Tema: Inequações III

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Q1. Resolva as inequações a seguir, considerando $U = \mathbb{N}$ e escreva o conjunto-solução:

a) $-11 < x - 4$ d) $8 \leq 2 - x$ g) $-6 > -\frac{3x}{11}$

b) $-7 \leq x + \frac{3}{5}$ e) $-29 \leq -5x$

c) $7 > 1 - x$ f) $4 < -\frac{3x}{5}$ h) $8 < \frac{4x}{17}$

Q2. Resolva as inequações a seguir, em \mathbb{Z} , e escreva o conjunto-solução:

a) $x - 3 \geq 1 - x$ d) $3x + 5 > 2x - 3$ g) $2 - 2x \geq 3 - 3x$

b) $2x + 1 \leq x - 2$ e) $1 - 2x < 5 + x$

c) $2x + 7 < x + 3$ f) $3 - x \geq 1 + x$ h) $11 > 2x + 5$

Q3. Resolva cada inequação a seguir, em \mathbb{Q} , e escreva o conjunto-solução:

a) $5(3 - x) - 3(7 - x) \geq 4 - (x - 13)$ i) $\frac{x+1}{-3} + \frac{x+2}{5} > \frac{x+3}{-4} - \frac{1}{10}$

b) $7(2x + 1) + 5(-3x - 1) < \frac{1}{2}$ j) $\frac{x}{3} + \frac{x-1}{2} + x \leq \frac{x-2}{5} - \frac{x-3}{4}$

c) $3(x - 3) > 2(2x - 7) - 5(1 - x)$ k) $3 < \frac{x}{5} + \frac{x}{2} + \frac{x}{4} - \frac{1}{20}$

d) $5(1 - x) - 3(4 - 2x) > 7 - x$ l) $-1 > \frac{x}{2} + \frac{x}{3} - \frac{x}{4} + \frac{x}{5} - \frac{1}{6}$

e) $0 \leq (x+1)+(x+2)+(x+3)+(x+5)$ m) $\frac{5}{4} \geq \frac{2x+3}{2} - \frac{3x-1}{4} - \frac{1-4x}{3} + \frac{7-2x}{9}$

f) $3(x + 1) < 2(x - 8)$ n) $\frac{1}{2} - \frac{3x-1}{7} < \frac{7}{2} + \frac{11x-3}{7} - \frac{2-x}{14}$

g) $3(x - 1) + 2 \geq 5(x + 1) - 3(x - 2)$ o) $\frac{2(x-1)}{3} - \frac{3(1-x)}{5} < \frac{3(-x-2)}{2} - \frac{7(x+1)}{10}$

h) $4(x + 2) > 2(x - 1) + 3(x + 1)$ p) $\frac{1}{4}(x + 2) - \frac{1}{5}(2x - 1) > \frac{2}{7}(x - \frac{7}{2})$

GABARITO

Q1.

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|-----------------|--|
| a) \mathbb{N} | e) $\{x \in \mathbb{N} \mid 0 \leq x \leq 5\}$ |
| b) \mathbb{N} | f) \emptyset |
| c) \mathbb{N} | g) $\{x \in \mathbb{N} \mid x > 22\}$ |
| d) \emptyset | h) $\{x \in \mathbb{N} \mid x > 34\}$ |

Q2.

- | | |
|--|---|
| a) $\{x \in \mathbb{Z} \mid x \geq 2\}$ | e) $\{x \in \mathbb{Z} \mid x > -\frac{4}{3}\}$ |
| b) $\{x \in \mathbb{Z} \mid x \leq -3\}$ | f) $\{x \in \mathbb{Z} \mid x \leq 1\}$ |
| c) $\{x \in \mathbb{Z} \mid x < -4\}$ | g) $\{x \in \mathbb{Z} \mid x \geq 1\}$ |
| d) $\{x \in \mathbb{Z} \mid x > -8\}$ | h) $\{x \in \mathbb{Z} \mid x < 3\}$ |

Q3.

- | | |
|---|--|
| a) $\{x \in \mathbb{Q} \mid x \leq -23\}$ | i) $\{x \in \mathbb{Q} \mid x > -\frac{55}{7}\}$ |
| b) $\{x \in \mathbb{Q} \mid x > \frac{3}{2}\}$ | j) $\{x \in \mathbb{Q} \mid x \leq \frac{51}{113}\}$ |
| c) $\{x \in \mathbb{Q} \mid x < \frac{5}{3}\}$ | k) $\{x \in \mathbb{Q} \mid x > \frac{61}{19}\}$ |
| d) $\{x \in \mathbb{Q} \mid x > 7\}$ | l) $\{x \in \mathbb{Q} \mid x < -\frac{50}{19}\}$ |
| e) $\{x \in \mathbb{Q} \mid x \geq -\frac{11}{4}\}$ | m) $\{x \in \mathbb{Q} \mid x \leq -\frac{34}{49}\}$ |
| f) $\{x \in \mathbb{Q} \mid x < -19\}$ | n) $\{x \in \mathbb{Q} \mid x > -\frac{32}{29}\}$ |
| g) $\{x \in \mathbb{Q} \mid x \geq 12\}$ | o) $\{x \in \mathbb{Q} \mid x < -\frac{73}{104}\}$ |
| h) $\{x \in \mathbb{Q} \mid x < 7\}$ | p) $\{x \in \mathbb{Q} \mid x < \frac{238}{61}\}$ |