



Exercícios: Inequação logarítmica

Resolva as inequações:

1.

$$\log_3(5x - 2) < \log_3 4$$

2.

$$\log_{\frac{1}{2}}(3x - 1) \geq \log_{\frac{1}{2}}(2x + 3)$$

3.

$$\log_{\frac{1}{2}}(x^2 - 1) > \log_{\frac{1}{2}}(3x + 9)$$

4.

$$\log(x^2 - x - 2) < \log(x - 4)$$

5.

$$\log_2(3x + 5) > 3$$

6.

$$\log_2(x^2 + x - 2) \leq 2$$

7.

$$\log_{\frac{1}{2}}(2x^2 - 6x + 3) < 1$$

8.

$$\log(x^2 + 3x + 3) > 0$$

9.

$$3 \cdot (\log_3 x)^2 + 5 \cdot \log_3 x - 2 \leq 0$$

10.

$$\left(\log_{\frac{1}{2}} x\right)^2 - 3 \cdot \log_{\frac{1}{2}} x - 4 > 0$$

Gabarito:

1. $S = \{x \in \mathbb{R} / 2/5 < x < 6/5\}$
2. $S = \{x \in \mathbb{R} / 1/3 < x \leq 4\}$
3. $S = \{x \in \mathbb{R} / -2 < x < -1 \text{ ou } 1 < x < 5\}$
4. $S = \{\emptyset\}$
5. $S = \{x \in \mathbb{R} / x > 1\}$

6. $S = \{x \in \mathbb{R} / -3 \leq x < -2 \text{ ou } 1 < x \leq 2\}$
7. $S = \{x \in \mathbb{R} / x < 1/2 \text{ ou } x > 5/2\}$
8. $S = \{x \in \mathbb{R} / x < -2 \text{ ou } x > -1\}$
9. $S = \{x \in \mathbb{R} / 1/9 \leq x \leq \sqrt[3]{3}\}$
10. $S = \{x \in \mathbb{R} / 0 < x < \frac{1}{16} \text{ ou } x > 2\}$