

SOLVING INEQUALITIES

Solve each inequality and write your answer in interval notation or set-builder notation.

1. $5 - 2x > 1$ or $2x - 5 > 3$

2. $-8 < -2x + 4 \leq 3$

3. $|4x - 2| < 6$

4. $|3x - 8| > 1$

5. $|-4x + 3| > 15$

6. $x^2 - 6x + 5 > 0$

7. $2x^2 + 3x \leq 20$

8. $3x^2 - 10x - 8 \leq 0$

9. $\frac{x - 4}{x + 5} > 0$

10. $\frac{3x}{x^2 - 4} \leq 1$

SOLVING INEQUALITIES

Answers

1. $(-\infty, 2) \cup (4, \infty)$

OR

$$\{x \mid x < 2 \text{ or } x > 4\}$$

2. $\left[\frac{1}{2}, 6\right)$

OR

$$\{x \mid \frac{1}{2} \leq x < 6\}$$

3. $(-1, 2)$

OR

$$\{x \mid -1 < x < 2\}$$

4. $\left(-\infty, \frac{7}{3}\right) \cup (3, \infty)$

OR

$$\{x \mid x < \frac{7}{3} \text{ or } x > 3\}$$

5. $(-\infty, -3) \cup \left(\frac{9}{2}, \infty\right)$

OR

$$\{x \mid x < -3 \text{ or } x > \frac{9}{2}\}$$

6. $(-\infty, 1) \cup (5, \infty)$

OR

$$\{x \mid x < 1 \text{ or } x > 5\}$$

7. $\left[-4, \frac{5}{2}\right]$

OR

$$\{x \mid -4 \leq x \leq \frac{5}{2}\}$$

8. $\left[-\frac{2}{3}, 4\right]$

OR

$$\{x \mid -\frac{2}{3} \leq x \leq 4\}$$

9. $(-\infty, -5) \cup (4, \infty)$

OR

$$\{x \mid x < -5 \text{ or } x > 4\}$$

10. $(-\infty, -2) \cup [-1, 2) \cup [4, \infty)$ OR $\{x \mid x < -2 \text{ or } -1 \leq x < 2 \text{ or } x \geq 4\}$