Linear Inequalities

Solve the given inequalities. Give your answer in interval notation.

1. $3(2-3x) > 4(1-4x)$

2. $\sqrt{2}(x+2) > \sqrt{8}(3-x)$

3. $2x+13 \geq \frac{1}{3}x-7$

4. $\frac{3(2t-2)}{2} > \frac{6t-3}{5} + \frac{t}{10}$

Quadratic and Rational Inequalities

Solve the following quadratic inequalities

1. $x^2 - 7x > -6$

2. $x^2 + 10x + 21 \leq 0$

Solve the following rational inequalities

1. $\frac{3-x}{4+x} \geq 1$

2. $\frac{4x-1}{2} + \frac{5x+7}{4} \leq 0$

Absolute Value Inequalities

Solve the following absolute inequalities

1. $|2-3x|<5$

2. $\left|4-\frac{1}{2}x\right|\geq 6$

3. $-3<|2+3x|<5$

4. $-2\leq\left|\frac{2x+1}{2}\right|<6$