

Polynomial Inequality

Steps in Solving Polynomial Inequalities

1. Write the polynomial in the correct form.
2. Find the key or critical values.
3. Make a sign analysis chart.
4. Perform the sign analysis.
5. Use the sign analysis chart to determine which sections satisfy the inequality.
6. Write the final answer using interval notation.

Practice Exercises

Find the solution set of each inequality and show the solution set on the number line.

1. $x^2 < -x + 6$
2. $x^4 + 4x^3 - 12x^2 \leq 0$
3. $3x^2 - 2x - 11 > 0$
4. $(x+2)(x+1)(x+6) > 0$
5. $(x-5)^2(x-1)(x+3) < 0$

Problem Set

Find the solution set of each inequality and show the solution set on the number line.

1. $x^2 - 10 < 3x$
2. $x^2 - 5x \geq -6$
3. $x^3 + x^2 - 2x \leq 0$
4. $(x+4)(x-2)(x-7) > 0$
5. $(x+1)(x-3)^2 > 0$

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