Quadratic Inequalities

Quadratic Inequalities

Solve $x^2 + 4x - 5 < 10x$

Now suppose we changed < for >…

Step 1: Get 0 on one side.

Step 2: Factorise.

Step 3: Sketch $y = LHS$.

Step 4: Identify parts of line where y value (i.e. LHS of inequality) satisfies inequality.

Quadratic Inequalities

Solve $-x^2 - 4x + 5 \geq -20$

Now suppose we changed < for >...

Step 1: Get 0 on one side.

Step 2: Factorise.

Step 3: Sketch $y = LHS$.

Step 4: Identify parts of line where y value (i.e. LHS of inequality) satisfies inequality.

Solving Quadratic Inequalities

TOP Maths IGCSE

Solve $2x^2 - 2x - 15 > x^2 - 4x$

Step 1: Get 0 on one side.

Step 2: Factorise.

Step 3: Sketch $y = LHS$.

Step 4: Identify parts of line where y value (i.e. LHS of inequality) satisfies inequality.

Solving Quadratic Inequalities

Solve $x^2 + 2x - 15 \leq 0$

Step 1: Get 0 on one side.

Step 2: Factorise.

Step 3: Sketch $y = LHS$.

Step 4: Identify parts of line where y value (i.e. LHS of inequality) satisfies inequality.

Further Examples

Solve $-x^2 + 5x \geq -4$

Solve $-x^2 < -9$

1 **Solve $x^2 - x - 6 \leq 0$**

2 **Solve $2x^2 + (x-2)^2 > 3x$**

Step 1: Get 0 on one side.

Step 2: Factorise.

Step 3: Sketch $y = LHS$.

Step 4: Identify parts of line where y value (i.e. LHS of inequality) satisfies inequality.

a **Solve $16 - x^2 < 0$**

b **Solve $10 - (2x + 1)^2 \geq x$**