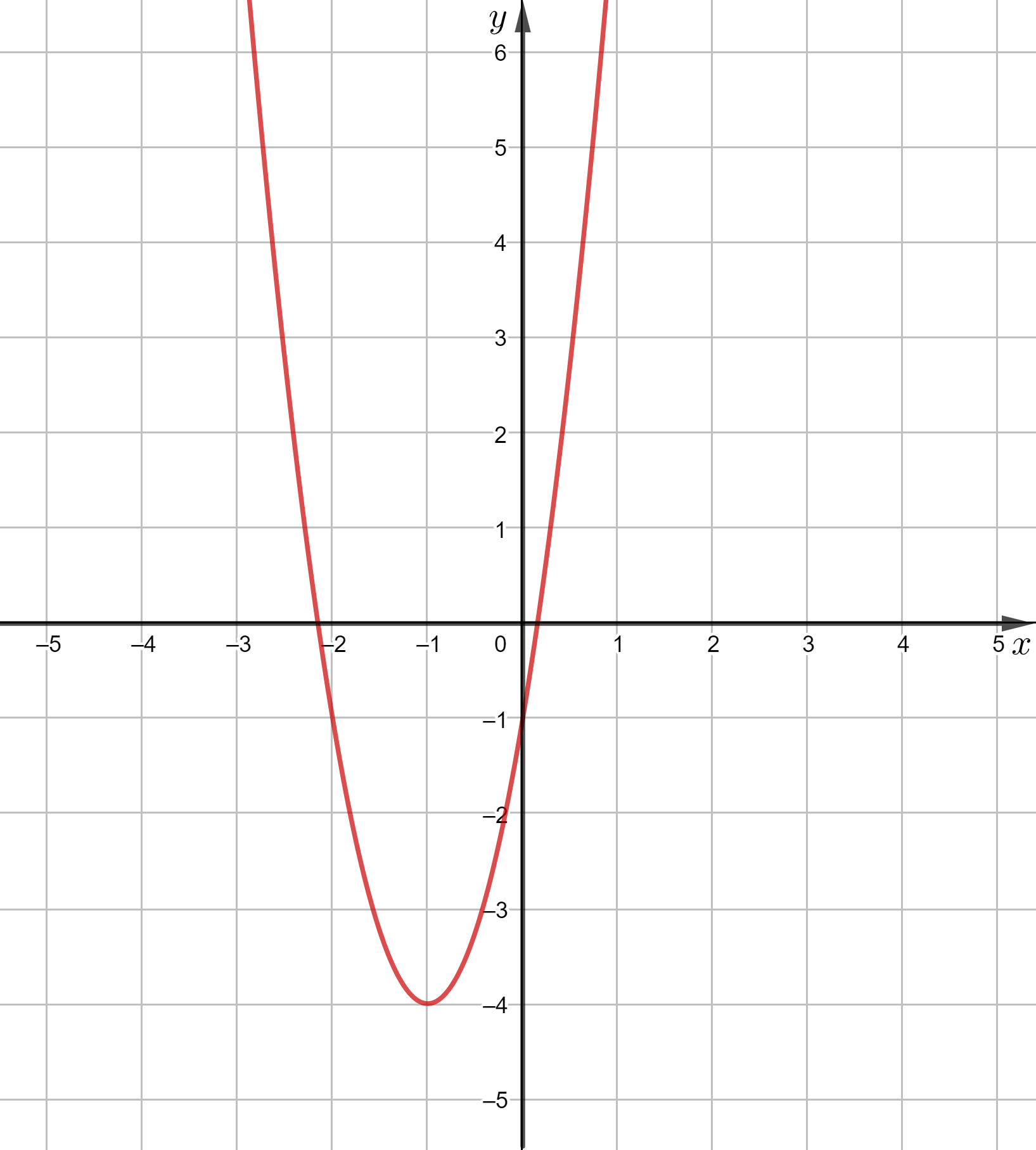
**Task 1**. (7p) A quadratic function is defined by vertex form .

1. Write down coordinates of the vertex of parabola which is the graph of the .
2. Write down coordinates of the point , where the graph of intersects the y-axis.
3.  Sketch the graph of .
4. Write down the equation of the line of symmetry of the graph of .
5. Write down the range of the function .
6. Describe monotonicity intervals of the function .

The function increases in the interval .

The function increases in the interval .

1. Write down the general form of the function

**Task 2**. (3p) Calculate coefficients i in the formula of a quadratic function  ,   
knowing that the points and lie on the graph of this function.

Solution

Let be the graph of the function .

So:

Answer:

**Task 3**. (4p) Work out the vertex form for the quadratic function , knowing that the interval  is the range of and .

Solution



Answer: .