

Mathematics

Solving quadratic simultaneous equations graphically

Mr Coward

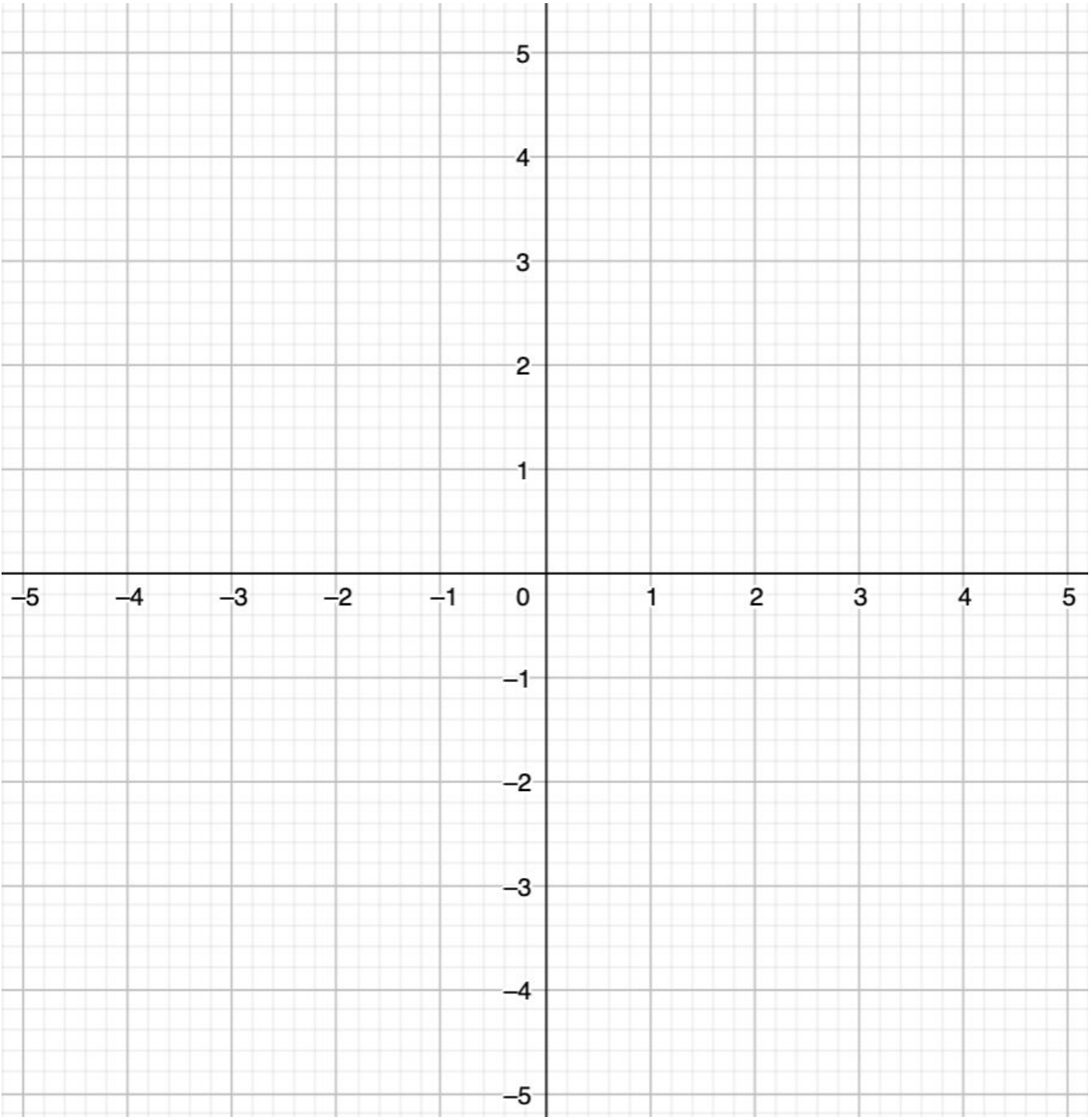


Try this

Use the table of values to plot the quadratic.

$$y = x^2 - 3x + 1$$

x	-1	0	1	2	3	4
y						



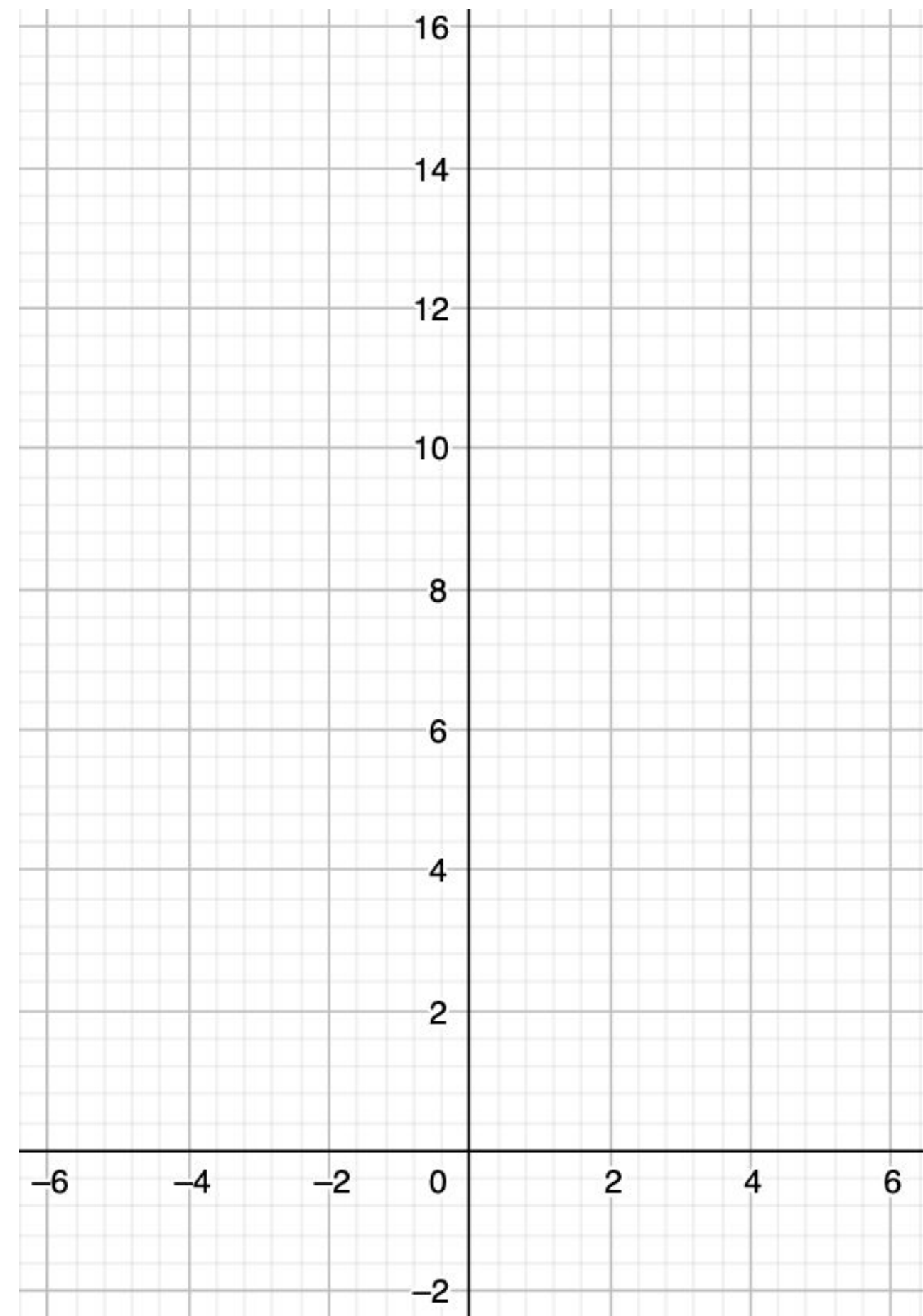
Independent task

1) Find approximate solutions to the following simultaneous equations.

$$y = x^2 \text{ and } y = 4x - 1$$

Use a table of values from -4 to 4.

x	-4	-3	-2	-1	0	1	2	3	4
y									



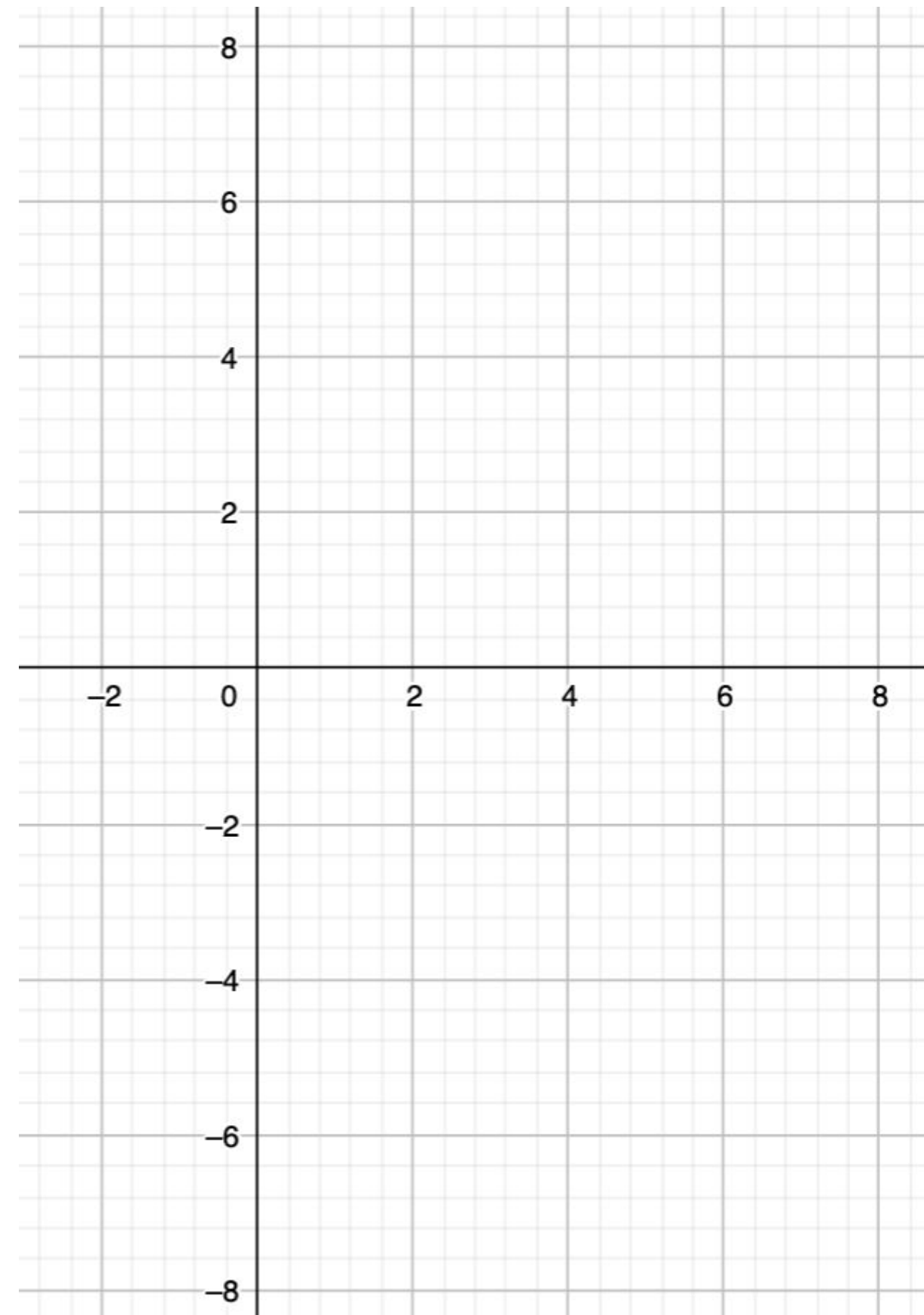
Independent task

2) Find approximate solutions to the following simultaneous equations.

$$y = x^2 - 5x - 1 \text{ and } y = x - 3$$

Use a table of values from -1 to 6.

x	-1	0	1	2	3	4	5	6
y								

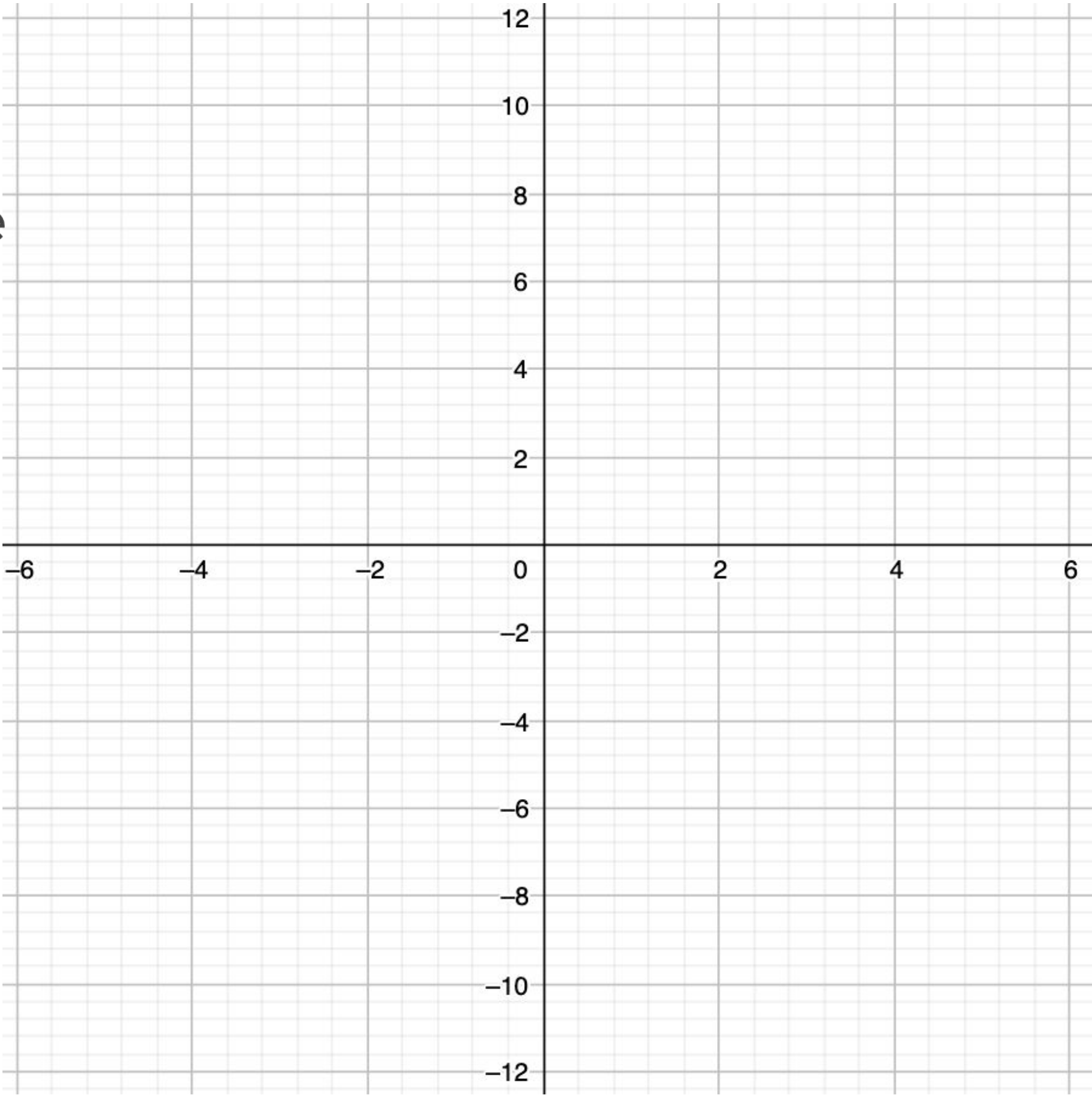


Independent task

3) Find approximate solutions to the following simultaneous equations.

$y = 9 - x^2$ and $x + y = 4$

x	-4	-3	-2	-1	0	1	2	3	4
y									

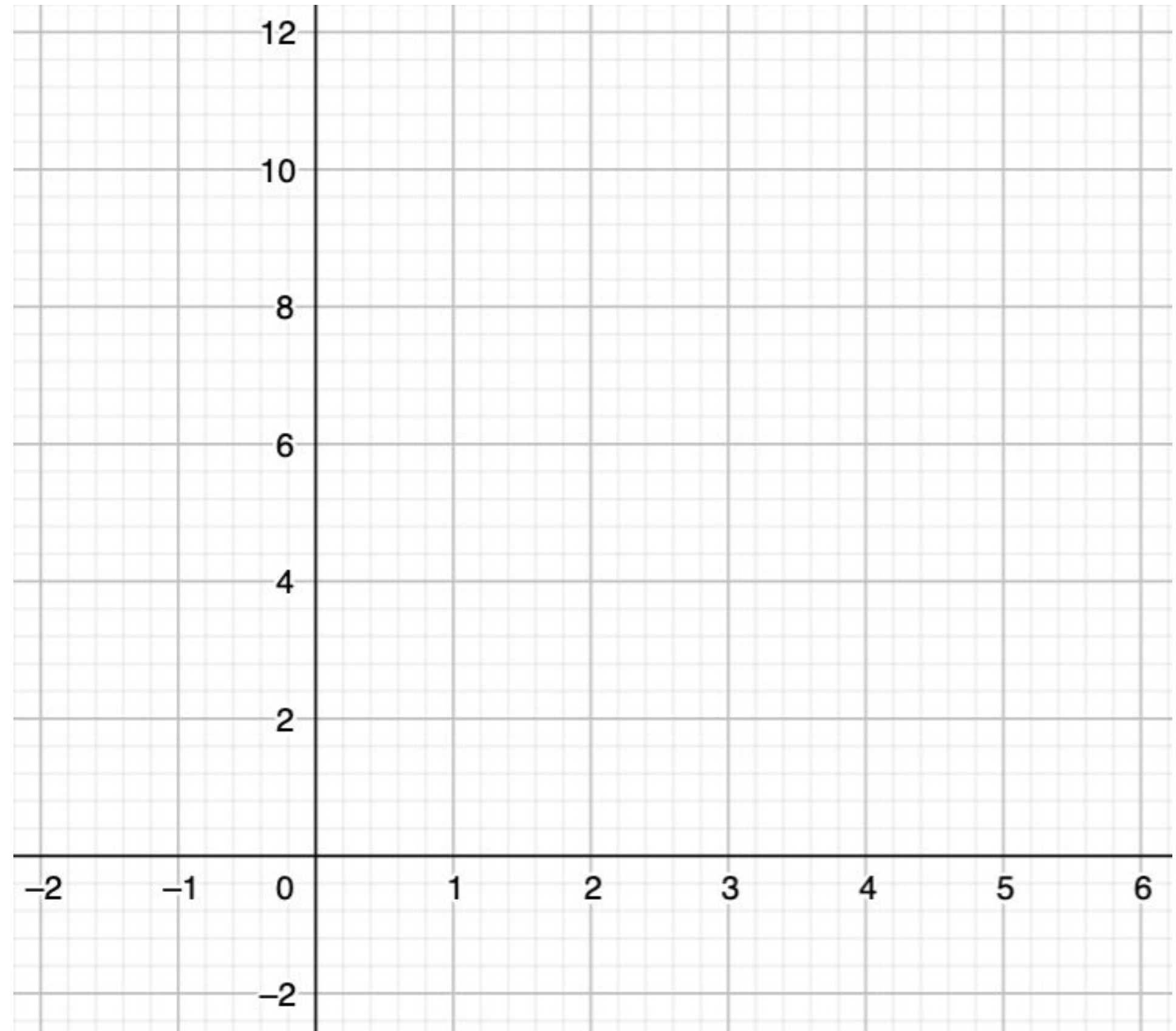


Independent task

4) Show graphically that the following two simultaneous equations have one solution.

$$y = x^2 - 4x + 4 \text{ and } y = 0$$

x	-1	0	1	2	3	4	5
y							

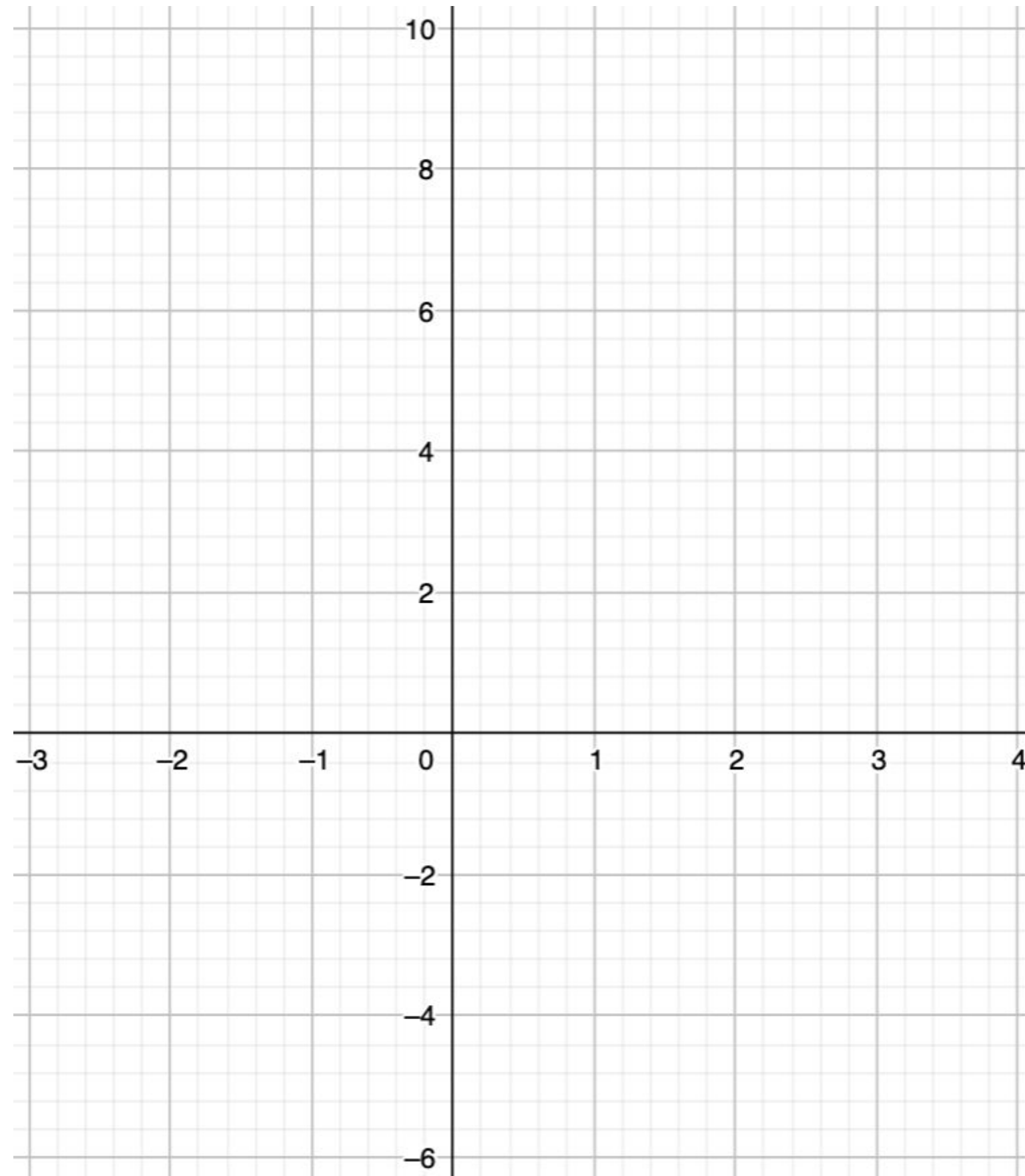


Independent task

5) Show graphically that the following two simultaneous equations have no solution.

$$y = 2x^2 + 2x - 3 \text{ and } y = -5$$

x	-3	-2	-1	0	1	2
y						



Explore

The graph shows the curve

$$y = x^2 - 6x + 3$$

Give an equation of a line such that there are:

- i. two solutions
- ii. one solution
- iii. zero solutions.

To the simultaneous equations.

