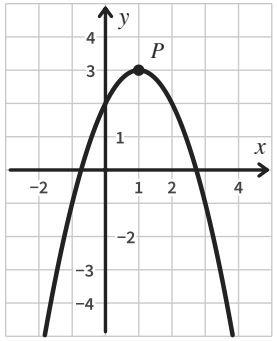
Graph transformations: reflections

1

The graph of $y = f(x)$ is drawn. P is on it.
Sketch $y = -f(x)$.

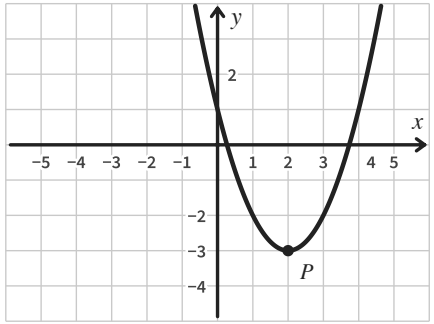


Reflection in the x **axis**

P goes to

2

The graph of $y = f(x)$ is drawn. P is on it.
Sketch $y = f(-x)$.

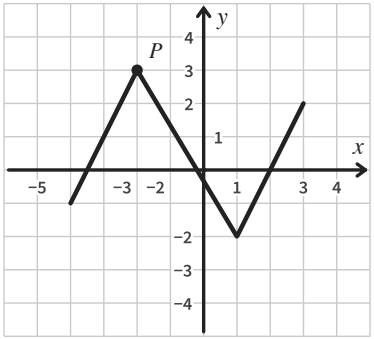


Reflection in the y **axis**

P goes to

3

Sketch $y = -f(x)$. Reflect each corner.

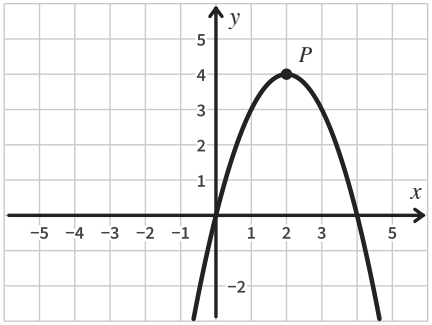


Reflection in the

P goes to

4

Sketch $y = f(-x)$.



Reflection in the

P goes to

5

Complete the table of values for $y = -f(x)$.

x	−2	−1	0	1	2
$f(x)$	5	0	−3	−4	−3
$-f(x)$					

Reflection in the

(1, −4) goes to

6

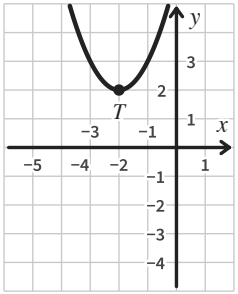
P(−3, 4) is on the graph of $y = f(x)$.
Where does P go on each graph?

On $y = -f(x)$, P goes to

On $y = f(-x)$, P goes to

7

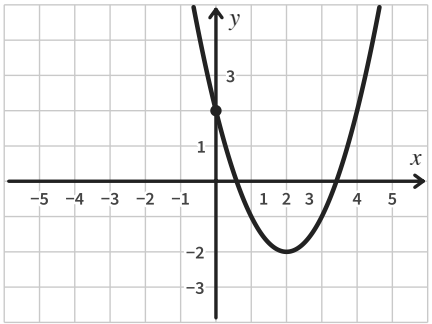
T is the turning point of $y = f(x)$. Jo says T goes to (2, 2) on $y = -f(x)$.
Explain her mistake.



T goes to

8 *Notice the change!*

Sketch $y = f(-x)$. The point (0, 2) is on the y axis.



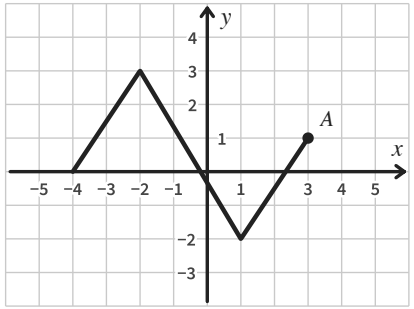
Reflection in the

(0, 2) goes to

Graph transformations: reflections *further practice*

9

Sketch $y = f(-x)$. Write down where A(3, 1) goes.



Answer _____

10

The table gives some values of $f(x)$.
Write down four points on the graph of $y = f(-x)$.

x	1	2	3	4
$f(x)$	5	2	1	2

Answer _____

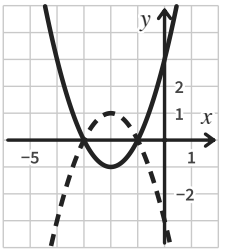
11

$y = f(x)$ has a maximum point at (−4, 3).
Write down the turning point of $y = -f(x)$ and of $y = f(-x)$. Is each a maximum or a minimum?

Answer _____

12

The dashed graph is a reflection of $y = f(x)$ (solid).
Write down its equation.



Answer _____

13

$f(x) = x^2 + 4x$. Write the equations of $y = f(-x)$ and $y = -f(x)$ without f.

Answer _____

14

A designer draws the right half of a logo as $y = f(x)$ for $0 \le x \le 4$.
Its highest point is (3, 5). She reflects it in the y axis to make the left half.
Write the equation of the left half and its highest point.

Answer _____

15

$y = f(x)$ has a turning point at (1, 4).
Write down the turning point of $y = -f(x) - 3$.

Answer _____

16

Nia says reflecting a graph in the y axis always gives a different graph.
Use $f(x) = x^2 - 1$ to show she is wrong.

Answer _____