Graph transformations: reflections

Exit ticket ANSWERS Name _____

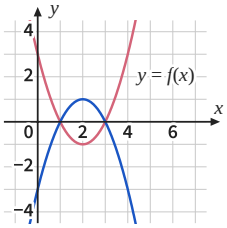
1. When x is −1, 0, 1 and 2, $f(x)$ is 3, 0, −1 and 0.
Work out $-f(x)$ for each one.

−3, 0, 1, 0

2. P(−3, 2) is on the graph of $y = f(x)$. Where is P on the graph of $y = f(-x)$?

(3, 2)

3. The graph of $y = f(x)$ is drawn.
Sketch the graph of $y = -f(x)$.



The Maths Habit

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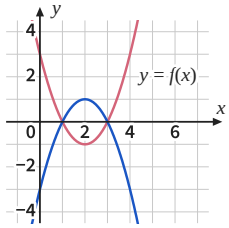

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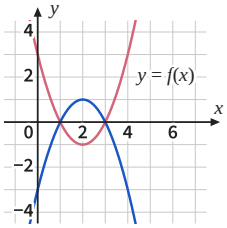

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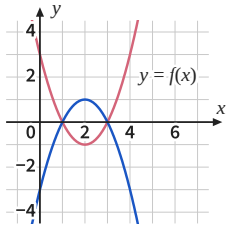

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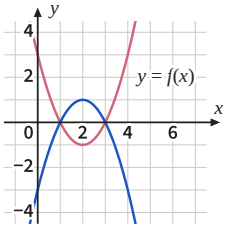

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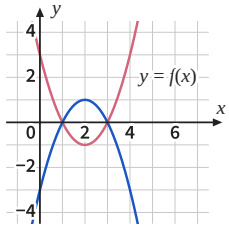


The Maths Habit

Exit ticket Graph transformations: reflections

1 **When x is −1, 0, 1 and 2, $f(x)$ is 3, 0, −1 and 0. Work out $-f(x)$ for each one.**

−3, 0, 1, 0

TESTS A table of values with every y changing sign: −f(x)

LOOK FOR −3, 0, −1, 0 every value made negative: −(−1) = 1

3, 0, −1, 0 the $f(x)$ row copied

FIX IT $f(x) = x^2 - 4$. Work out $-f(x)$ when x is −1, 0, 1 and 2. 3, 4, 3, 0

2 **P(−3, 2) is on the graph of $y = f(x)$. Where is P on the graph of $y = f(-x)$?**

(3, 2)

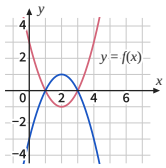
TESTS A point on y = f(−x): reflect in the y axis

LOOK FOR (−3, −2) reflected in the x axis: the minus is inside the bracket

(−2, 3) the coordinates swapped

FIX IT P(4, −1) is on the graph of $y = f(x)$. Where is P on the graph of $y = f(-x)$? (−4, −1)

3 **The graph of $y = f(x)$ is drawn. Sketch the graph of $y = -f(x)$.**



reflected in the x axis

TESTS Sketching y = −f(x), the whole method

LOOK FOR reflected in the y axis the minus is outside the bracket: the x axis

the turning point left where it was (2, −1) goes to (2, 1)

FIX IT (2, 3) is on $y = f(x)$. Where is it on $y = -f(x)$? (2, −3)