Graph transformations: where does the point go?

Exit ticket ANSWERS Name _____

1. (5, −1) is on the graph of $y = f(x)$. Where is it on the graph of $y = f(x) + 4$?

(5, 3)

2. (−2, 3) is on the graph of $y = f(x)$. Where is it on the graph of $y = f(x - 5)$?

(3, 3)

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

(−1, −4)

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NEXT LESSON

1 **(5, −1) is on the graph of $y = f(x)$. Where is it on the graph of $y = f(x) + 4$?**

(5, 3)

TESTS — A point on y = f(x) + a: outside the bracket changes y

LOOK FOR
- (1, −1) 4 taken off x: outside the bracket changes y
- (9, −1) 4 added to x

FIX IT — (−2, 3) is on $y = f(x)$. Where is it on $y = f(x) - 5$? (−2, −2)

2 **(−2, 3) is on the graph of $y = f(x)$. Where is it on the graph of $y = f(x - 5)$?**

(3, 3)

TESTS — A point on y = f(x − a): inside the bracket, the opposite way

LOOK FOR
- (−7, 3) moved left: inside the bracket goes the opposite way to the sign
- (−2, −2) 5 taken off y

FIX IT — (4, −2) is on $y = f(x)$. Where is it on $y = f(x + 3)$? (1, −2)

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

(−1, −4)

TESTS — A turning point after a reflection

LOOK FOR
- (1, 4) reflected in the y axis: the minus is outside the bracket
- (1, −4) both signs changed

FIX IT — $y = f(x)$ has a turning point at (3, −5). Write the turning point of $y = f(-x)$. (−3, −5)