

Graph Transformations: Where Does the Point Go? *stretch*

ANSWERS

1



$(-3, 2)$ is on the graph of $y = f(x)$.
Where is it on the graph of
 $y = f(-x) + 4$?

x changes sign; y goes up 4

(3, 6)

Answer

2



$(4, -1)$ is on the graph of $y = f(x)$.
Where is it on the graph of
 $y = -f(x - 2)$?

2 right, then y changes sign

(6, 1)

Answer

3



These points are on the graph of
 $y = f(x)$. Fill in where each one is on
the graph of $y = f(x + 1) - 2$, and
describe the move.

$y = f(x)$	$y = f(x + 1) - 2$
$(-2, 3)$	<i>$(-3, 1)$</i>
$(0, -1)$	<i>$(-1, -3)$</i>
$(5, 2)$	<i>$(4, 0)$</i>

1 left and 2 down

Rule

4



A point on $y = f(x)$ moves to $(2, 6)$ on
the graph of $y = f(x - 3) + 1$.
Where was it on the graph of $y = f(x)$?

the move is 3 right and 1 up

undo it: 3 left and 1 down

$(-1, 5)$

Answer

5



The point $(5, 2)$ on the graph of $y = f(x)$
moves to $(-5, 2)$. Write two different
equations the new graph could have.

a reflection in the y axis

or a translation 10 to the left

$y = f(-x)$ or $y = f(x + 10)$

Answer

6



A drone's height is $h = f(t)$ metres after
 t seconds. Its highest point is $(12, 40)$.
A second drone flies the same path,
starting 5 seconds later and
8 m lower.
Write its equation and its
highest point.

later: inside the bracket, - 5

lower: outside the bracket, - 8

$h = f(t - 5) - 8$; $(17, 32)$

Answer

7



$(3, 4)$ is on the graph of $y = f(x)$.
Kim says that on the graph of
 $y = -f(x + 1)$ it is at $(4, -4)$.
Explain her mistake and give the
right point.

+ 1 inside: 1 left, not right

$(3, 4) \rightarrow (2, 4) \rightarrow (2, -4)$

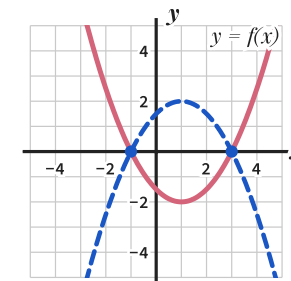
$(2, -4)$

Answer

8



Which points on the graph of $y = f(x)$
stay in the same place on the graph of
 $y = -f(x)$? Explain why.



on the x axis $y = 0$, and $-0 = 0$

$(-1, 0)$ and $(3, 0)$

Answer