

PC1-7 Transformations

If the point $(3, -4)$ was on a graph $y = f(x)$. What point is on the graph of $y = 3f\left(\frac{1}{4}(x+2)\right) - 5$? Explain in detail the steps to this transformation.

$$(3, -4) \rightarrow \text{Multiply } x \text{ by } 4 \rightarrow (12, -4)$$

$$(12, -4) \rightarrow \text{Subtract } 2 \text{ from } x \rightarrow (10, -4)$$

$$(10, -4) \rightarrow \text{Multiply } y \text{ by } 3 \rightarrow (10, -12)$$

$$(10, -12) \rightarrow \text{Subtract } 5 \text{ from } y \rightarrow (10, -17)$$

The answer:

$$(10, -17)$$

Describe what happens to each coordinate:

$-f(x)$: Multiply y by -1

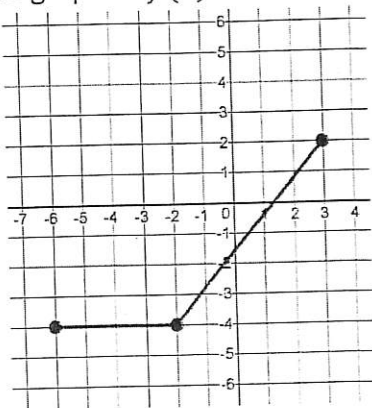
$f(-x)$: Divide x by -1

$6f(x)$: Multiply y by 6

$f(6x)$: Divide x by 6

$f\left(\frac{1}{3}x\right)$: Multiply x by 3

The graph of $f(x)$



Graph $-f(2x) + 2$

