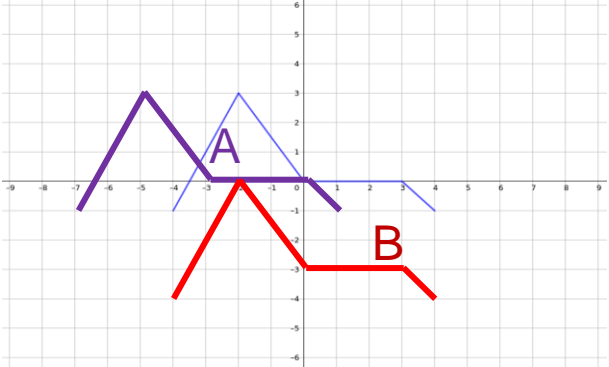


Graph Transformations Mark Scheme

1(a)	The graph moves 1 place to the right	[1] $f(x + a)$ moves $-a$ units in the x direction
1(b)	The graph moves up 7 places	[1] adds 7 to every y value
1(c)	The graph moves 5 places to the left	[1]
2		[1] A correctly plotted [1] B correctly plotted [1] C correctly plotted on y -axis [1] C correctly plotted on x -axis
3		[1] A correctly plotted [1] B correctly plotted [1] C correctly plotted
4(a)	This is a reflection in the x -axis. $A: (-2, 2), \quad B: (0, -2)$ New $A: (-2, -2), \quad$ New $B: (0, 2)$	[1] for one co-ordinate correct [1] for two co-ordinates correct [1] for all co-ordinates
4(b)	This is a translation to the right by 3 $A: (-2, 2), \quad B: (0, -2)$ New $A: (1, 2), \quad$ New $B: (3, -2)$	[1] for one co-ordinate correct [1] for two co-ordinates correct [1] for all co-ordinates

Turn over ►

<p>5(a)</p>		<p>[1] A correctly plotted on y-axis</p> <p>[1] A correctly plotted on x-axis</p> <p>[1] B correctly plotted on y-axis</p> <p>[1] B correctly plotted on x-axis</p>
<p>5(b)</p>	<p>Move right 3, move down 3</p>	<p>[2] mark per translation step</p>
<p>6(a)</p>	<p>$y = f(x + 3)$</p>	<p>[1]</p>
<p>6(b)</p>	<p>$y = -f(x)$</p>	<p>[1]</p>

END