

6. [Maximum mark: 6]

Let f and g be functions such that $g(x) = 2f(x+1) + 5$.

- (a) The graph of f is mapped to the graph of g under the following transformations:

vertical stretch by a factor of k , followed by a translation $\begin{pmatrix} p \\ q \end{pmatrix}$.

Write down the value of

- (i) k ;

- (ii) p ;

- (iii) q .

[3 marks]

- (b) Let $h(x) = -g(3x)$. The point A(6, 5) on the graph of g is mapped to the point A' on the graph of h . Find A'.

[3 marks]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.