



The diagram shows the graphs of $y = 2^{3x}$ and $y = 2^{3x+2}$. The graph of $y = 2^{3x}$ can be transformed to the graph of $y = 2^{3x+2}$ by means of a stretch.

(a) Give details of the stretch.

[2]

The point A lies on $y = 2^{3x}$ and the point B lies on $y = 2^{3x+2}$. The line segment AB is parallel to the y -axis and the difference between the y -coordinates of A and B is 36.

(b) Determine the x -coordinate of A . Give your answer in the form $m \log_2 n$ where m and n are constants to be determined.

[3]