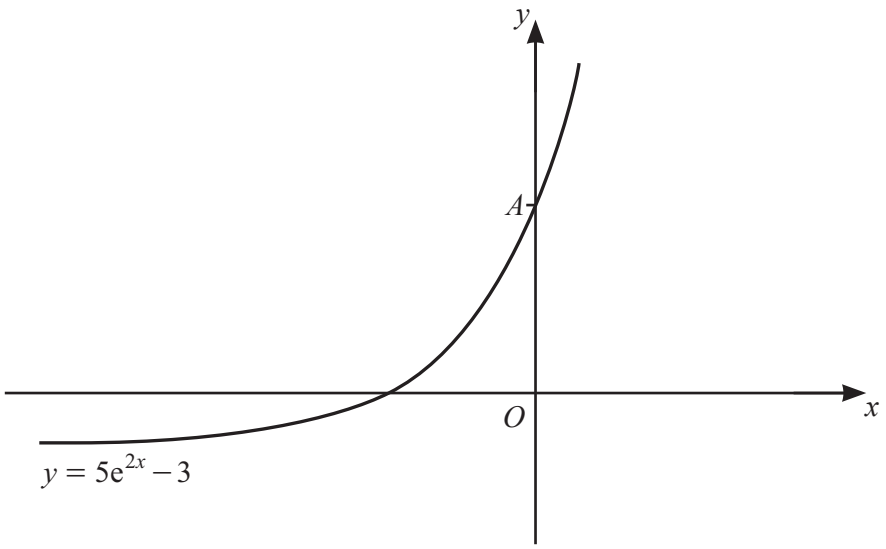
6



The diagram shows the curve $y = 5e^{2x} - 3$. The curve meets the y-axis at the point A. The tangent to the curve at A meets the x-axis at the point B. Find the length of AB. [6]

7 Variables x and y are such that $y = \dfrac{4x^3 + 2\sin 8x}{1-x}$. Use differentiation to find the approximate change in y as x increases from 0.1 to $0.1 + h$, where h is small. [6]