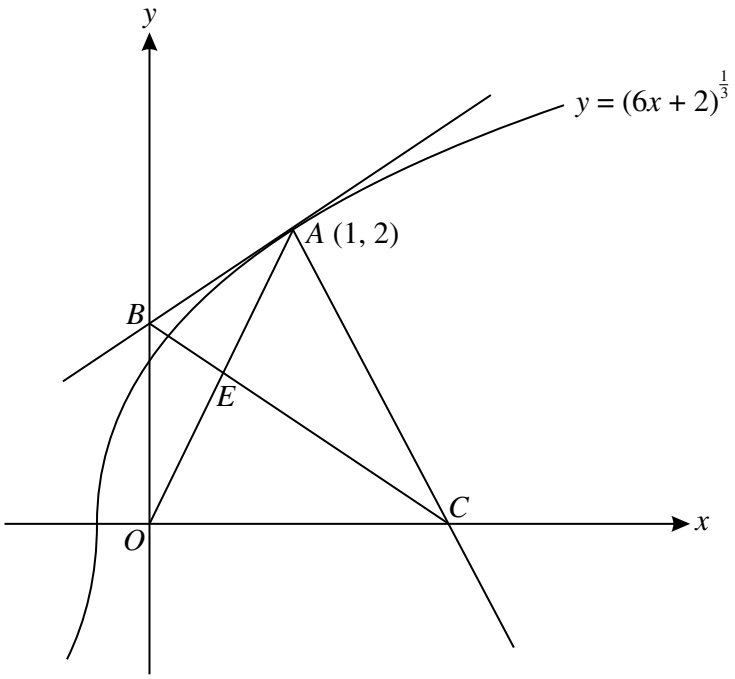
11



The diagram shows the curve $y = (6x + 2)^{\frac{1}{3}}$ and the point A (1, 2) which lies on the curve. The tangent to the curve at A cuts the y-axis at B and the normal to the curve at A cuts the x-axis at C.

(i) Find the equation of the tangent AB and the equation of the normal AC. [5]

(ii) Find the distance BC. [3]

(iii) Find the coordinates of the point of intersection, E, of OA and BC, and determine whether E is the mid-point of OA. [4]