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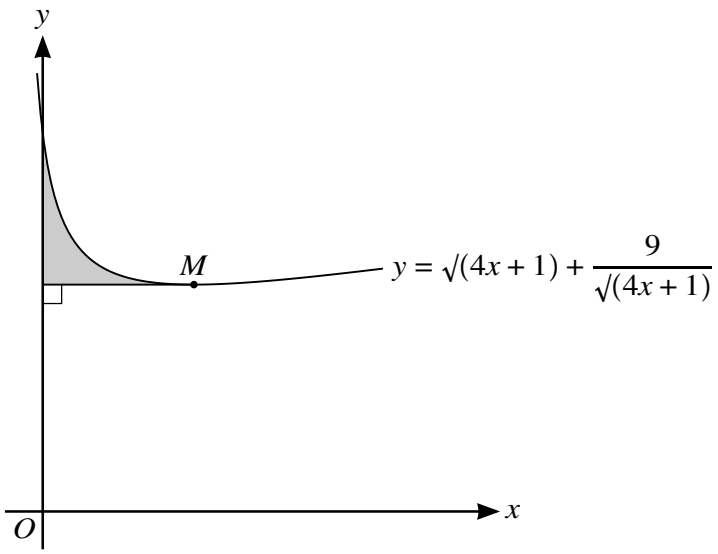

The diagram shows part of the curve $y = \sqrt{(4x + 1)} + \frac{9}{\sqrt{(4x + 1)}}$ and the minimum point M.

(i) Find expressions for $\frac{dy}{dx}$ and $\int y \, dx$. [6]

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(ii) Find the coordinates of M. [3]

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The shaded region is bounded by the curve, the y-axis and the line through M parallel to the x-axis.

(iii) Find, showing all necessary working, the area of the shaded region. [3]

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