



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]

[illegible]

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

[3]

This image shows a full page of white paper with horizontal dashed lines, typical of primary school handwriting practice paper. The lines are evenly spaced and run across the entire width of the page. There are no margins, text, or other markings present.

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]

[3]

This image shows a full page of white paper with ten horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.