

10 A curve C has equation $y = 8x + \frac{1}{2x-1}$ $x \neq \frac{1}{2}$

(a) Write down an equation of the asymptote to C which is parallel to the y -axis.

(1)

(b) Show that C has a minimum point at $x = \frac{3}{4}$ and a maximum point at $x = \frac{1}{4}$.

(9)

(c) Find the y coordinate of

(i) the minimum point,

(ii) the maximum point,

(iii) the point where C crosses the y -axis.

(3)

(d) Sketch the curve C , showing clearly the asymptote found in part (a), the coordinates of the turning points and the coordinates of the point where C crosses the y -axis.

(3)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Question 10 continued

Ruled area for writing the answer to Question 10.



P 4 8 4 0 7 A 0 2 9 3 2

Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Question 10 continued

Handwritten answer area for Question 10 continued, consisting of 25 horizontal dotted lines.



P 4 8 4 0 7 A 0 3 1 3 2

Question 10 continued

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 10 is 16 marks)

TOTAL FOR PAPER IS 100 MARKS

END

