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

(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 $x = \dfrac{3}{4}$ and a maximum point at $x = \dfrac{1}{4}$

(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)

Question 10 continued

Question 10 continued

Question 10 continued

Question 10 continued

(Total for Question 10 is 16 marks)

TOTAL FOR PAPER IS 100 MARKS

END