5 A curve C has equation $y = \dfrac{2x - 5}{x + 3}$, $x \neq -3$

(a) Find an equation of the asymptote to C which is parallel to

(i) the x-axis, (ii) the y-axis.

(2)

(b) Find the coordinates of the point where C crosses

(i) the x-axis, (ii) the y-axis.

(2)

(c) Sketch the graph of C, showing clearly its asymptotes and the coordinates of the points where the graph crosses the coordinate axes.

(3)

(d) Find the gradient of C at the point on C where $x = -1$

(3)

Question 5 continued

Question 5 continued

Question 5 continued

(Total for Question 5 is 10 marks)