

7 The curve G has equation $y = 3 - \frac{1}{x-1}, x \neq 1$

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

- (i) the x -axis,

- (ii) the y -axis.

(2)

- (b) Find the coordinates of the point where G crosses

- (i) the x -axis,

- (ii) the y -axis.

(2)

- (c) Sketch G , showing clearly the asymptotes and the coordinates of the points where the curve crosses the coordinate axes.

(3)

A straight line l intersects G at the points P and Q . The x -coordinate of P and the

x-coordinate of Q are roots of the equation $2x - 3 = \frac{1}{x - 1}$

- (d) Find an equation of l .

(2)

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

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