4. The parabola C has equation $y^2 = 8x$

The line l

- passes through the focus of C
- has gradient $\frac{8}{15}$
- meets C at the point G where $y > 0$
- meets C at the point H where $y < 0$

(a) Determine the coordinates of G and the coordinates of H

(6)

The midpoint of the line segment GH is M

(b) Determine the shortest distance from M to the directrix of C

(2)

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Question 4 continued

(Total for Question 4 is 8 marks)