

**8** The equation of a curve is  $y = 5 - \frac{8}{x}$ .

(i) Show that the equation of the normal to the curve at the point  $P(2, 1)$  is  $2y + x = 4$ . [4]

This normal meets the curve again at the point  $Q$ .

(ii) Find the coordinates of  $Q$ . [3]

(iii) Find the length of  $PQ$ . [2]