



The diagram shows the curve  $y^2 = 2x - 1$  and the straight line  $3y = 2x - 1$ . The curve and straight line intersect at  $x = \frac{1}{2}$  and  $x = a$ , where  $a$  is a constant.

(i) Show that  $a = 5$ . [2]

(ii) Find, showing all necessary working, the area of the shaded region. [6]