5 The function f is defined by $\mathrm{f}(x) = \dfrac{2x+1}{2x-1}$ for $x < \dfrac{1}{2}$.

(a) (i) State the value of $\mathrm{f}(-1)$. [1]

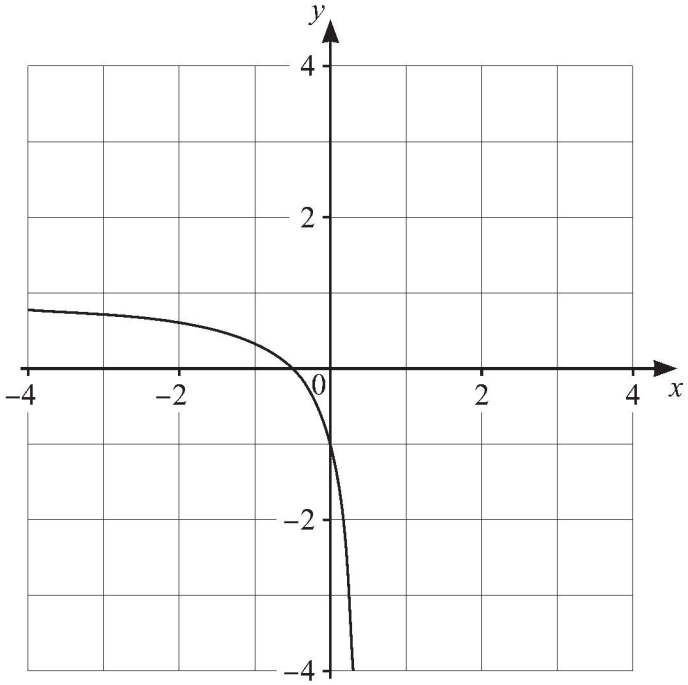
.....

.....

.....

.....

(ii)



The diagram shows the graph of $y = \mathrm{f}(x)$. Sketch the graph of $y = \mathrm{f}^{-1}(x)$ on this diagram. Show any relevant mirror line. [2]

(iii) Find an expression for $\mathrm{f}^{-1}(x)$ and state the domain of the function f^{-1}. [4]

.....

.....

.....

.....

.....

.....

.....

.....

The function g is defined by $g(x) = 3x + 2$ for $x \in \mathbb{R}$.

(b) Solve the equation $f(x) = gf\left(\frac{1}{4}\right)$. [3]