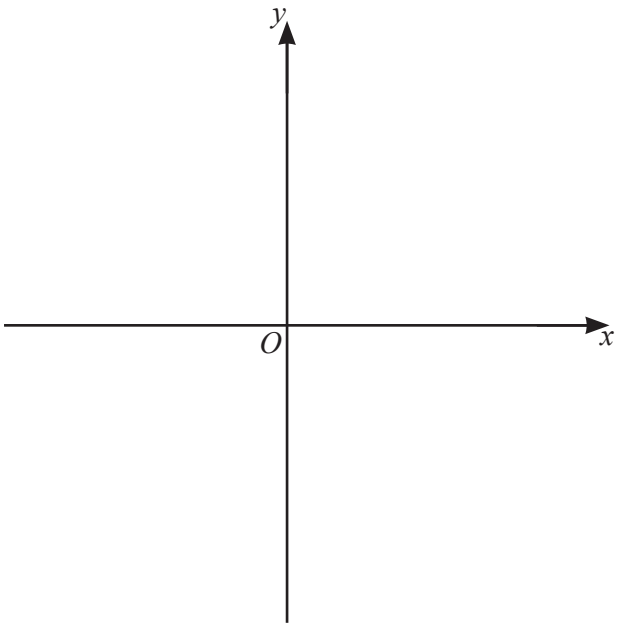
8 The function f is defined for $x \geqslant 0$ by $\mathrm{f}(x) = 5 - 2\mathrm{e}^{-x}$.

(a) (i) Find the domain of f^{-1}. [2]

(ii) Solve $\mathrm{ff}^{-1}(x) = \sqrt{5x-4}$. [3]

(iii) On the axes, sketch the graph of $y = \mathrm{f}(x)$ and hence sketch the graph of $y = \mathrm{f}^{-1}(x)$. Show clearly the positions of any points where your graphs meet the coordinate axes and the positions of any asymptotes. [4]



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(b) The function g is defined for $0 \leqslant x \leqslant 0.2$ by $g(x) = \frac{3}{1-x}$.

Find and simplify an expression for $f^{-1}g(x)$. [4]