18 The functions f and g are defined as

$$f(x) = \frac{x}{4x - 3} \quad \text{and} \quad g(x) = x - 5$$

(a) State which value of x must be excluded from any domain of the function f.

.....

(1)

(b) Find $fg(x)$.
Simplify your answer.

$fg(x) =$ .....

(2)

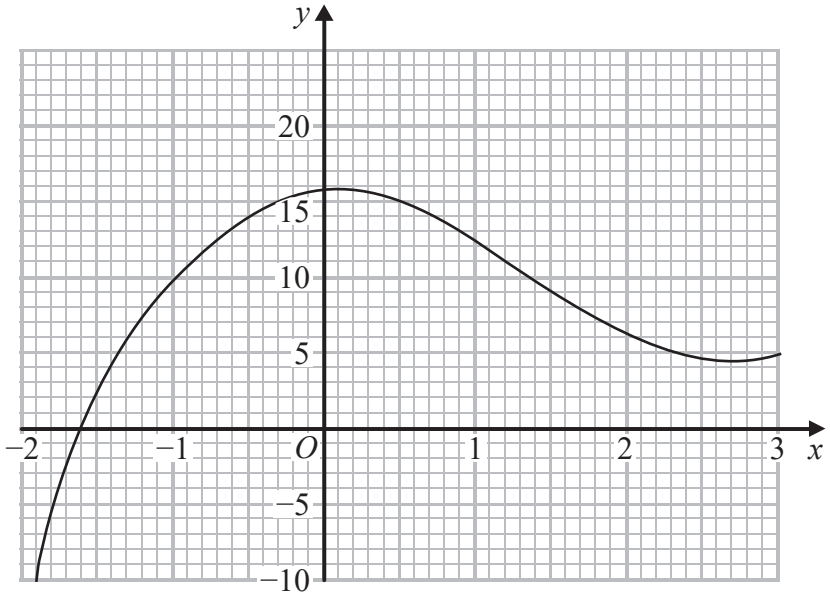
(c) Express the inverse function f^{-1} in the form $f^{-1}(x) = \ldots$

$f^{-1}(x) =$ .....

(3)

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Part of the curve with equation $y = h(x)$ is shown on the grid.



(d) Find an estimate for the gradient of the curve at the point where $x = -0.5$
Show your working clearly.

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(3)

(Total for Question 18 is 9 marks)

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