

6 The functions f and g are defined as

$$f : x \mapsto 3x - 1$$

$$g : x \mapsto \frac{3}{x} \quad x \neq 0$$

- (a) Find $gf(2)$

(1)

The function h is such that $h(x) = \frac{6}{2x - 3}$

- (b) State the value of x that needs to be excluded from any domain of h

(1)

- (c) Express the inverse function h^{-1} in the form $h^{-1} : x \mapsto \dots$

(2)

- (d) Solve the equation $fh(x) = g(x)$

Give your solutions to 3 significant figures.

(5)

$$\left[\text{Solutions of } ax^2 + bx + c = 0 \text{ are } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \right]$$



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Question 6 continued

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(Total for Question 6 is 9 marks)