

- 4 The functions f and g are defined as

$$f: x \mapsto 3x + 4$$

$$g: x \mapsto \frac{5}{x - 3}$$

(a) State the value of x that must be excluded from any domain of g .

(1)

(b) Find $f(5)$

(1)

(c) Find $fg(2)$

(2)

The function h is defined as

$$h: x \mapsto x^2 - 6x - 8 \text{ where } x \geq 3$$

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

(3)

[The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$



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Question 4 continued**DO NOT WRITE IN THIS AREA****DO NOT WRITE IN THIS AREA****DO NOT WRITE IN THIS AREA****(Total for Question 4 is 7 marks)**