

7 The functions  $f$ ,  $g$  and  $h$  are defined by

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

$$g: x \mapsto 2x^2$$

$$h: x \mapsto \frac{1}{x+1} \quad x \neq -1$$

(a) Find (i)  $g(\sqrt{6})$

(ii)  $h\left(-\frac{1}{3}\right)$  (2)

(b) Express  $hf(x)$  in terms of  $x$ , simplifying your answer.

(1)

(c) Solve the equation

(i)  $g(x) = \frac{25}{8}$

(ii)  $gf(x) = x$  (7)

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**Question 7 continued**

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**Question 7 continued**

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(Total for Question 7 is 10 marks)

