

7 The function g is defined as

$$g : x \mapsto \frac{10}{2x - 3}$$

(a) Find the value of x that must be excluded from the domain of g

(1)

(b) Solve $g(x) = 5$

(3)

The function f is defined as

$$f : x \mapsto 3x^2 + 9x - 7 \quad \text{for } x > -\frac{3}{2}$$

(c) Find $f\left(-\frac{1}{2}\right)$

(2)

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

(4)

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



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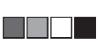
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Question 7 continued

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(Total for Question 7 is 10 marks)