

**8** The function  $f$  is such that

$$f: x \mapsto 1 - \frac{1}{x} \quad \text{where } x \neq 0$$

- (a) State a value that cannot be in the range of the function  $f$  (1)
- (b) Solve  $16f(x) = x + 8$  (4)
- (c) Show that  $ff(x) = f^{-1}(x)$  (6)
- (d) State a value that cannot be in the domain of the function  $f^{-1}$  (1)
- (e) Evaluate  $fff(2)$  (1)

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

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**Question 8 continued**

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**Question 8 continued**

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Question 8 continued

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(Total for Question 8 is 13 marks)

