

**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)

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

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



### **Question 8 continued**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**



P 7 2 9 1 9 A 0 2 3 4 0

### **Question 8 continued**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**



### **Question 8 continued**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

**DO NOT WRITE IN THIS AREA**

(Total for Question 8 is 13 marks)



P 7 2 9 1 9 A 0 2 5 4 0