

$$f(x) = 3x^2 + 6x + 7$$

Given that  $f(x)$  can be written in the form  $A(x + B)^2 + C$ , where  $A$ ,  $B$  and  $C$  are rational numbers,

(a) find the value of  $A$ , the value of  $B$  and the value of  $C$ .

(3)

(b) Hence, or otherwise, find

(i) the value of  $x$  for which  $\frac{1}{f(x)}$  is a maximum,

(ii) the maximum value of  $\frac{1}{f(x)}$ .

(2)



(continued from page 10)

