

$$f(x) = 4x^2 - 8x + 7$$

Given that  $f(x) = l(x - m)^2 + n$ , for all values of  $x$ ,

(a) find the value of  $l$ , the value of  $m$  and the value of  $n$ .

(3)

(b) Hence, or otherwise, find

- (i) the minimum value of  $f(x)$ ,
- (ii) the value of  $x$  for which this minimum occurs.

(2)



(Total for Question 3 is 5 marks)

