

5

$$f(x) = ax^3 + 5bx^2 + 8ax - 4b \quad \text{where } a \text{ and } b \text{ are integers}$$

Given that

$$(x + 2) \text{ is a factor of } f(x)$$

and that

$$\text{when } f(x) \text{ is divided by } (x + 3) \text{ the remainder is } 21$$

(a) show that $a = 2$ and find the value of b

(5)

(b) Use algebra to solve the equation $f(x) = 0$

(4)

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Question 5 continued

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(Total for Question 5 is 9 marks)

