9 The equation $3x^2 - 4x + 6 = 0$ has roots α and β.

(a) Without solving the equation, write down

   (i) the value of $\alpha + \beta$

  (ii) the value of $\alpha\beta$

(2)

(b) Without solving the equation, show that $\alpha^3 + \beta^3 = -\dfrac{152}{27}$

(3)

(c) Form a quadratic equation, with integer coefficients, that has roots $\dfrac{\alpha}{\beta^2}$ and $\dfrac{\beta}{\alpha^2}$

(5)

Question 9 continued

P 4 7 8 7 8 A 0 2 5 3 6

Question 9 continued

P 4 7 8 7 8 A 0 2 6 3 6

Question 9 continued

(Total for Question 9 is 10 marks)

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