

CIE
Further Pure Mathematics 1
分类真题
2020-2022 册

A Level Clouds 出品

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Chapter 1

Roots of Polynomial Equations

Q1: 9231/11/S20

2 The cubic equation $6x^3 + px^2 - 3x - 5 = 0$, where p is a constant, has roots α, β, γ .

(a) Find a cubic equation whose roots are $\alpha^2, \beta^2, \gamma^2$. [3]

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(b) It is given that $\alpha^2 + \beta^2 + \gamma^2 = 2(\alpha + \beta + \gamma)$.

(i) Find the value of p . [3]

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(ii) Find the value of $\alpha^3 + \beta^3 + \gamma^3$. [2]

Q2: 9231/13/S20

1 The cubic equation $7x^3 + 3x^2 + 5x + 1 = 0$ has roots α, β, γ .

(a) Find a cubic equation whose roots are $\alpha^{-1}, \beta^{-1}, \gamma^{-1}$. [3]

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(b) Find the value of $\alpha^{-2} + \beta^{-2} + \gamma^{-2}$. [2]

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(c) Find the value of $\alpha^{-3} + \beta^{-3} + \gamma^{-3}$. [2]

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