Polynomials Overview (26/6/23)

Q1

If the quadratic equation $2x^2 + 5x - 9 = 0$ has roots α and β, find the quadratic equation which has roots $\frac{1}{\alpha}$ and $\frac{1}{\beta}$

Q2

If the roots of the equation $x^3 - 14x^2 + 56x - 64 = 0$ are

α, β & γ, find the equation with roots $\frac{1}{\alpha}$, $\frac{1}{\beta}$ & $\frac{1}{\gamma}$

Q3

If the roots of the equation $x^2 + x - 13 = 0$ are α & β, find the equation with roots $2\alpha + 3\beta$ & $3\alpha + 2\beta$

Q4

Find the roots of the equation $x^3 - 14x^2 + 56x - 64 = 0$,

given that they form a geometric progression.

Q5

If the roots of the equation $x^5 + bx^4 + cx^3 + dx^2 + ex + f = 0$ are 5 consecutive positive integers, find expressions for these roots.

Q6

If α, β and γ are the roots of the equation

$x^3 - 14x^2 + 56x - 64 = 0$,

find the equation with roots $\alpha\beta$, $\alpha\gamma$ and $\beta\gamma$.

Q7

If α, β and γ are the roots of the equation

$x^3 - 2x^2 - 4x + 5 = 0$,

find the equation with roots $\alpha + \beta\gamma$, $\beta + \alpha\gamma$ and $\gamma + \alpha\beta$.

Q8

If the roots of the equation $x^3 + x^2 + x + 1 = 0$ are α, β & γ, find the equation with roots $\alpha + 1, \beta + 1$ & $\gamma + 1$