Alpha Beta (Sum of Cubes)

Q1)
The roots of $x^2-4x+3=0$ are α and β .

(i) Find a quadratic equation with roots α^3 and β^3 .

(ii) Find the value of $\alpha^2+\beta^2-2\alpha\beta$.

(iii) Given that α is greater than β , show that $\alpha-\beta=2$ and hence find a quadratic equation with roots α^3 and $-\beta^3$.

Ans:

(i) $x^2 - 28x + 27 = 0$

(ii) $x^2 - 26x - 27 = 0$