8 The quadratic equation

$$x^2 - 4k\sqrt{2}\,x + 2k^4 - 1 = 0$$

where k is a positive constant, has roots α and β

Given that $\alpha^2 + \beta^2 = 66$ and that $\alpha^3 + \beta^3 = p\sqrt{2}$ where p is an integer,

find the value of p

(11)

Question 8 continued

Question 8 continued

Question 8 continued

(Total for Question 8 is 11 marks)