

$$f(x) = x^2 + (k - 3)x + 4$$

The roots of the equation $f(x) = 0$ are α and β

- (a) Find, in terms of k , the value of $\alpha^2 + \beta^2$

(3)

Given that

$$4(\alpha^2 + \beta^2) = 7\alpha^2\beta^2$$

- (b) without solving the equation $f(x) = 0$, form a quadratic equation, with integer coefficients, which has roots $\frac{1}{\alpha^2}$ and $\frac{1}{\beta^2}$

(5)

- (c) find the possible values of k .

(5)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Question 10 continued

(Total for Question 10 is 13 marks)





Question 11 continued



TOTAL FOR PAPER IS 100 MARKS