7 (a) Find the set of values of k for which the equation $kx^2 - 4x + 2k = 7$ has real roots

(4)

Given that the roots of the equation $kx^2 - 4x + 2k = 7$ are α and β,

(b) form a quadratic equation with roots $\frac{\alpha + 1}{\alpha}$ and $\frac{\beta + 1}{\beta}$

Give each coefficient in terms of k.

(8)

Question 7 continued

Question 7 continued

Question 7 continued

(Total for Question 7 is 12 marks)