9 The roots of a quadratic equation are α and β where $\alpha + \beta = -\frac{7}{3}$ and $\alpha\beta = -2$

(a) Find a quadratic equation, with integer coefficients, which has roots α and β

(4)

Given that $\alpha > \beta$ and without solving the equation,

(b) show that $\alpha - \beta = \frac{11}{3}$

(2)

(c) form a quadratic equation, with integer coefficients, which has roots

$$\frac{\alpha + \beta}{\alpha} \text{ and } \frac{\alpha - \beta}{\beta}$$

(7)

Question 9 continued

(Total for Question 9 is 13 marks)