6 $f(x) = 2x^2 + 5x - p$

The equation $f(x) = 0$ has roots α and β

Given that $\alpha^3 + \beta^3 = -\frac{215}{8}$

(a) find the value of p

(5)

Without solving the equation $f(x) = 0$

(b) form a quadratic equation, with integer coefficients, that has roots

$$\frac{\alpha + \beta}{\alpha^2} \text{ and } \frac{\alpha + \beta}{\beta^2}$$

(5)

Question 6 continued

Question 6 continued

Question 6 continued

(Total for Question 6 is 10 marks)