(a) A sequence of numbers is formed by adding the corresponding terms of an A.P and a G.P. The common ratio of the G.P is 4. The first three terms of the sequence are 8, 20 and 59. Find the first term of the A.P and G.P.   [4 marks]

(b) A polynomial p(x) leaves a remainder 9 when divided by $(x - 2)$ and the remainder 4 when divided by (x+3). Find the remainder when p(x) is divided by $(x - 2)(x + 3)$ [5 marks]

(c) $\log_{3^m} z = \frac{1}{m} \log z$, hence solve the equation $\log_{81} z + \log_3 z + \log_{\sqrt{3}} z - 13 = 0$ [5 marks]

(d) Simplify $\frac{\sqrt[3]{18} \times \sqrt{48}}{\sqrt[3]{216}}$ [4 marks]

(e) Complete the square $4.6x^2 + 3.5x - 1.75$, hence solve the equation $4.6x^2 + 3.5x - 1.75 = 0$ [5 marks]

(f) Factorize the expression $6x^3 - 17x^2 - 4x + 3$ hence solve the equation

$6x^3 - 17x^2 - 4x + 3 = 0$ [8 marks]