2. $f(z) = z^4 + \lambda z^3 + 14z^2 + 9\lambda z + 45 \qquad \lambda \in \mathbb{R}$

(a) Show that $f(3i) = 0$

(2)

(b) Hence determine the exact range of values of λ for which the equation $f(z) = 0$ has no real solutions.

(5)

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Question 2 continued

(Total for Question 2 is 7 marks)