

Part IV

Answer the question in this part. A correct answer will receive 6 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. A correct numerical answer with no work shown will receive only 1 credit. The answer should be written in pen. [6]

39 Solve algebraically for all values of x :

$$81^{x^3+2x^2} = 27^{\frac{5x}{3}}$$

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39 Solve algebraically for all values of x :

$$\log_{(x+3)}(2x + 3) + \log_{(x+3)}(x + 5) = 2$$