PMT

10 (a) Find the value of $\log_3 9$

(1)

Given that $\log_9 4 = k \log_3 4$

(b) find the value of k

(2)

(c) Show that

$$2x \log_3 x - 3 \log_3 x - 4x \log_9 4 + 6 \log_9 4 = \log_3 \left(\frac{x}{4} \right)^{(2x-3)}$$

(5)

(d) Hence solve the equation $2x \log_3 x - 3 \log_3 x - 4x \log_9 4 + 6 \log_9 4 = 0$

(3)

Question 10 continued

Question 10 continued

(Total for Question 10 is 11 marks)

TOTAL FOR PAPER IS 100 MARKS