PMT

9 (a) Write $\dfrac{3}{(3-x)^3}$ in the form $a(1-bx)^{-3}$

where a and b are fractions in their lowest terms.

(2)

(b) Expand $\dfrac{3}{(3-x)^3}$ in ascending powers of x up to and including the term in x^3

Express each coefficient as a fraction in its lowest terms.

(3)

(c) (i) Use a suitable value of x with your expansion in part (b), to obtain an approximation for $\dfrac{24}{125}$ to 5 decimal places.

(ii) Find the percentage error, to 2 decimal places, of your approximation from the actual value.

(4)

P 7 1 6 4 2 A 0 2 6 3 6

Question 9 continued

Question 9 continued

Question 9 continued

(Total for Question 9 is 9 marks)

P 7 1 6 4 2 A 0 2 9 3 6