5 (a) Expand $(1+3x)^{\frac{1}{5}}$ in ascending powers of x up to and including the term in x^3, simplifying your terms as far as possible.

(4)

(b) By substituting $x = -\dfrac{1}{8}$ into your expansion, obtain an approximation for $\sqrt[5]{20}$

Write down all the figures on your calculator display.

(4)

(c) Explain why you cannot obtain an approximation for $\sqrt[5]{4}$ by substituting $x = 1$ into your expansion.

(1)

Question 5 continued

P 4 0 6 6 5 A 0 1 1 3 2

PMT

Question 5 continued

P 4 0 6 6 5 A 0 1 2 3 2

Question 5 continued

(Total for Question 5 is 9 marks)