8 (a) Find the full binomial expansion of $(1 - 2x)^5$, giving each coefficient as an integer.

(3)

(b) Expand $(1 + 2x)^{-5}$ in ascending powers of x up to and including the term in x^3, giving each coefficient as an integer.

(3)

(c) Write down the range of values of x for which this expansion is valid.

(1)

(d) Expand $\left(\frac{1 - 2x}{1 + 2x}\right)^5$ in ascending powers of x up to and including the term in x^2, giving each coefficient as an integer.

(3)

(e) Find the gradient of the curve with equation $y = \left(\frac{1 - 2x}{1 + 2x}\right)^5$ at the point $(0, 1)$.

(2)

Question 8 continued

Question 8 continued

Question 8 continued

(Total for Question 8 is 12 marks)