Daily Question – Pure Mathematics - Day 8

Topic: Sequences

The first four terms of a sequence are

$$3, \quad -6, \quad u_3, \quad -24, \ldots$$

(a) Decide, showing detailed reasoning, whether the sequence could be

(i) an arithmetic sequence,
(ii) a geometric sequence.
State, for each part, the value of u_3 if such a sequence is possible.

(6)

(b) Given instead that

- the sequence is periodic of period 4
- $\sum_{i=1}^{50} u_i = 141$

find the value of u_3

(3)

(Total for question = 9 marks)