

Sequences

Question Paper

Course	Edexcel IGCSE Maths
Section	3. Sequences, Functions & Graphs
Topic	Sequences
Difficulty	Very Hard

Time allowed: 60
Score: /43
Percentage: /100

Question 1

An arithmetic series has first term a and common difference d .

The sum of the first $2n$ terms of the series is four times the sum of the first n terms of the series.

Find an expression for a in terms of d .

Show your working clearly.

[4 marks]

Question 2

The n th term of an arithmetic series is u_n where $u_n > 0$ for all n

The sum to n terms of the series is S_n

Given that $u_4 = 6$ and that $S_{11} = (u_6)^2 + 18$

find the value of u_{20}

[6 marks]

Question 3

Here are the first four terms of an arithmetic series.

$$k \quad \frac{3k}{4} \quad \frac{k}{2} \quad \frac{k}{4}$$

Given that the 15th term of the series is $(90 + 2k)$,
calculate the sum of the first 30 terms of the series.

[5 marks]

Question 4

$(2x + 23)$, $(8x + 2)$ and $(20x - 52)$ are three consecutive terms of an arithmetic sequence.

Prove that the common difference of the sequence is 12

[4 marks]

Question 5

An arithmetic series has first term a and common difference d , where d is a prime number.

The sum of the first n terms of the series is S_n and

$$S_m = 39$$

$$S_{2m} = 320$$

Find the value of d and the value of m

Show clear algebraic working.

$$d = \dots\dots\dots$$

$$m = \dots\dots\dots$$

[5 marks]

Question 6

The sum of the first 48 terms of an arithmetic series is 4 times the sum of the first 36 terms of the same series.

Find the sum of the first 30 terms of this series.

[5 marks]

Question 7

The 25th term of an arithmetic series is 44.5

The sum of the first 30 terms of this arithmetic series is 765

Find the 16th term of the arithmetic series.

Show your working clearly.

[5 marks]

Question 8

The 10th term of an arithmetic series, S , is 66

The sum of the first 20 terms of S is 1290

Find the 5th term of S .

Show your working clearly.

[4 marks]

Question 9

The 3rd term of an arithmetic series, A , is 19

The sum of the first 10 terms of A is 290

Find the 10th term of A .

[5 marks]