

4.2 Arithmetic Sequences & Series

Question Paper

Course	Edexcel IAL Maths: Pure 2
Section	4. Sequences & Series
Topic	4.2 Arithmetic Sequences & Series
Difficulty	Easy

Time allowed: 30

Score: /28

Percentage: /100

Write down the next three terms in these arithmetic sequences

- (i) 30, 18, 6, ...
- (ii) $\frac{1}{4}, \frac{5}{12}, \frac{7}{12}, \frac{3}{4}, \dots$

[2 marks]

Question 2

Find the sum of the first four terms in the sequence defined by $u_n = 2n + 3$. Justify why this sequence is an arithmetic sequence.

[2]

[2 marks]

Question 3

Write down a formula for the $n^{
m th}$ term of each of the following arithmetic sequences

- (i) 16, 20, 24, ...
- (ii) First term: a = 3

Common difference: d = -3

(iii) a = 2, d = 6

[3 marks]

Find the 10^{th} and 20^{th} terms in each of the following arithmetic sequences

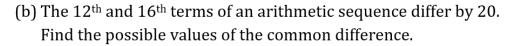
- (i) $u_n = 4 + 5n$
- (ii) $u_n = \frac{1}{2} \frac{1}{4}n$
- (iii) $u_n = 50 5n$

[3 marks]

Question 5

(a) The 4th and 8th terms of an arithmetic sequence are 20 and 64 respectively. Find the first term and the common difference.

[3 marks]



[2 marks]

Question 6

Find the sum of the first 20 terms of the arithmetic series that has first term 3 and common difference 4.

[2 marks]

Question 7

The first term of an arithmetic sequence is 3.

The 10th term of the sequence is 30.

The sum of the first n terms is 630.

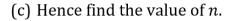
(a) Find the common difference.

[2 marks]

Question 7

(b) Show that $n^2 + n - 420 = 0$.

[2 marks]



[2 marks]

Question 8

An arithmetic series is given by

$$k + 2k + 3k + 4k + \cdots$$

where k is a constant.

(a) Write down a formula for the n^{th} term of the series, in terms of k.

[1 mark]

Question 8

(b) Show that the sum of the first n terms is $\frac{kn}{2}(n+1)$.

[2 marks]

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Question 8

(c) The sum of the first 12 terms is 39. Find the value of k.

[2 marks]