

Jan 11

- 6 The third term of an arithmetic progression is 24. The tenth term is 3.

Find the first term and the common difference.

Find also the sum of the 21st to 50th terms inclusive.

[5]

Jan 12

- 10 In an arithmetic progression, the second term is 11 and the sum of the first 40 terms is 3030. Find the first term and the common difference.

[5]

Jun 12

- 2 Find the second and third terms in the sequence given by

$$\begin{aligned}u_1 &= 5, \\ u_{n+1} &= u_n + 3.\end{aligned}$$

Find also the sum of the first 50 terms of this sequence.

[4]

Jan 13

- 11 (i) An arithmetic progression has first term A and common difference D . The sum of its first two terms is 25 and the sum of its first four terms is 250.

(A) Find the values of A and D .

[4]

(B) Find the sum of the 21st to 50th terms inclusive of this sequence.

[3]

Jun 13

- 2 The n th term of a sequence, u_n , is given by

$$u_n = 12 - \frac{1}{2}n.$$

(i) Write down the values of u_1 , u_2 and u_3 . State what type of sequence this is.

[2]

(ii) Find $\sum_{n=1}^{30} u_n$.

[3]

(ii) A sequence is defined by

$$\begin{aligned} u_1 &= a, \text{ where } a \text{ is an unknown constant,} \\ u_{n+1} &= u_n + 5. \end{aligned}$$

Find, in terms of a , the tenth term and the sum of the first ten terms of this sequence. [3]

- 3 An arithmetic progression has tenth term 11.1 and fiftieth term 7.1. Find the first term and the common difference. Find also the sum of the first fifty terms of the progression. [5]

Practice A

- 3 On his 1st birthday, John was given £5 by his Uncle Fred. On each succeeding birthday, Uncle Fred gave a sum of money that was £3 more than the amount he gave on the last birthday.
- (i) How much did Uncle Fred give John on his 8th birthday? [2]
- (ii) On what birthday did the gift from Uncle Fred result in the total sum given on all birthdays exceeding £200? [4]

Practice B

- 4 The first 3 terms of an arithmetical progression are 7, 5.9 and 4.8.

Find

- (i) the common difference, [1]
- (ii) the smallest value of n for which the sum to n terms is negative. [4]

Practice C

- 5 A sequence is defined by $a_k = 5k + 1$, for $k = 1, 2, 3, \dots$

(i) Write down the first three terms of the sequence. [1]

(ii) Evaluate $\sum_{k=1}^{100} a_k$. [4]

