Mathlaureate

Arithmetic Sequence Practice

Answer the following questions

1. The general term of an arithmetic sequence is given by: $u_n = 3n + 4$

[a] Find the first four terms of the sequence.

[b] Find the 50^{th} term of the sequence.

[c] Find the sum of the first 20 terms of the sequence.

2. The general term of an arithmetic sequence is given by $u_n = 11 - 4n$.

[a] Find the first term and the common difference of the sequence.

[b] Find the 20^{th} term of the sequence.

[c] Which term of the sequence is equal to -109 ?

[d] Find the sum of the first 25 terms of the sequence.

3. Consider the sequence: 2,6,10,14, …

[a] Show that it is an arithmetic sequence.

[b] Find the next three terms.

[c] Find the expression for the n^{th} term of the sequence.

[d] Hence, find the 15^{th} term of the sequence.

4. Consider the arithmetic sequence: 20,17,14,11, …

[a] Find the common difference

[b] Find the 10^{th} term of the sequence

[c] Given that $u_n = -37$, find n

[d] Find the sum of all positive terms in the sequence

5. Given that the 16^{th} term in an arithmetic sequence is 44 and the common difference is 3 :

[a] Find the first 4 terms of the sequence

[b] Find the 51^{st} term of the sequence

[c] Find the sum of the first 20 terms of the sequence

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6. In an arithmetic sequence, $u_{10} = 43$ and $u_{33} = 204$.

Find:

[a] The first term (u_1) and the common difference (d)

[b] The sum of the first 20 terms of the sequence (S_{20})

7. Find the sum of the arithmetic series: $11 + 18 + 25 + \cdots + 74$

8. In an arithmetic sequence, the first term is 3 and the 25^{th} term is 51. Find the sum of the first 30 terms of the sequence.

9. In an arithmetic sequence, the first term is 16 , the n^{th} term is 81 , and the sum of the first n terms is 679 . Find the number of terms n in the sequence.

10. In an arithmetic sequence, the 10^{th} term is 109 and the 38^{th} term is 389 .

[a] Find the first term and the common difference.

[b] Find the 20^{th} term of the sequence.

11. In an arithmetic sequence, $u_{14} = -52$ and $u_{40} = -156$. Find the sum of the first 50 terms of the sequence.

12. In an arithmetic sequence, $u_1 = -38, u_n = -478$, and $S_n = -11610$. Find the number of terms n.
