

1. In an arithmetic sequence, $u_1 = 2$ and $u_3 = 8$.
- (a) Find d . (2)
- (b) Find u_{20} . (2)
- (c) Find S_{20} . (2)
- (Total 6 marks)**

2. In an arithmetic sequence $u_1 = 7$, $u_{20} = 64$ and $u_n = 3709$.
- (a) Find the value of the common difference. (3)
- (b) Find the value of n . (2)
- (Total 5 marks)**

3. Consider the arithmetic sequence 3, 9, 15, ..., 1353.
- (a) Write down the common difference. (1)
- (b) Find the number of terms in the sequence. (3)
- (c) Find the sum of the sequence. (2)
- (Total 6 marks)**

4. An arithmetic sequence, u_1, u_2, u_3, \dots , has $d = 11$ and $u_{27} = 263$.
- (a) Find u_1 . (2)
- (b) (i) Given that $u_n = 516$, find the value of n .
- (ii) For this value of n , find S_n . (4)
- (Total 6 marks)**

5. The n^{th} term of an arithmetic sequence is given by $u_n = 5 + 2n$.
- (a) Write down the common difference. (1)
- (b) (i) Given that the n^{th} term of this sequence is 115, find the value of n .
(ii) For this value of n , find the sum of the sequence. (5)
- (Total 6 marks)**
6. Consider the arithmetic sequence 2, 5, 8, 11,
- (a) Find u_{101} . (3)
- (b) Find the value of n so that $u_n = 152$. (3)
- (Total 6 marks)**
7. Let $u_n = 3 - 2n$.
- (a) Write down the value of u_1 , u_2 , and u_3 . (3)
- (b) Find $\sum_{n=1}^{20} (3 - 2n)$. (3)
- (Total 6 marks)**
8. A theatre has 20 rows of seats. There are 15 seats in the first row, 17 seats in the second row, and each successive row of seats has two more seats in it than the previous row.
- (a) Calculate the number of seats in the 20th row. (4)
- (b) Calculate the **total** number of seats. (2)
- (Total 6 marks)**
9. (a) Write down the first three terms of the sequence $u_n = 3n$, for $n \geq 1$. (1)
- (b) Find
- (i) $\sum_{n=1}^{20} 3n$;
- (ii) $\sum_{n=21}^{100} 3n$.
- (5)**
- (Total 6 marks)**