



**Skill:** The  $n^{\text{th}}$  term of an arithmetic sequence

### Questions

*Attempt these questions independently showing full and clear solutions. Check each answer as you go.*

- Write down the first four terms of the arithmetic progressions in which:  
(i)  $a = 5, d = 6$       (ii)  $a = -2, d = 4$       (iii)  $a = 10, d = -7$
- Find an expression for the  $n^{\text{th}}$  term of each of the following arithmetic progressions:  
(a) 1, 5, 9, 13, ...  
(b) 24, 21, 18, 15, ...  
(c) -7, -5, -3, -1, ...  
(d) 2.9, 3.5, 4.1, 4.7, ...
- An arithmetic progression has  $n^{\text{th}}$  term  $8 - 3n$ . Write down and find the sum of the first four terms.
- The  $n^{\text{th}}$  term of an arithmetic progression is  $5n + 9$ . Which term has the value 549?
  - The  $n^{\text{th}}$  term of an arithmetic progression is  $38 - 3n$ . Which term has the value -12043?
- Determine the number of terms in the following arithmetic progression:  
 $8, 11, 14, \dots, 4529$
- Determine the number of terms in the arithmetic progression  
 $38, 29, 20, 11, \dots, -117925$
- How many odd integers are there between and including 865 and 12,753.
- How many even integers are there between 6,666 and 666,666,000 inclusively?
- How many multiples of 7 are there between 4,500 and 16,342?
- How many integers are there between 281 and 4,553 inclusive which are **not** multiples of 5?
- The 6<sup>th</sup> term of an AP is 5,535 and the 79<sup>th</sup> term is 4,586. Find the 10,000<sup>th</sup> term.