NTH TERM – PRACTICE QUESTIONS

1. Find the nth term of the following sequences:

(a) 5, 7, 9, 11, ...

(b) 7, 12, 17, 22, ...

(c) 10, 13, 16, 19, ...

(d) 4, 10, 16, 22, ...

(e) 5, 13, 21, 29, ...

(f) 9, 20, 31, 42, ...

(g) 11, 18, 25, 32, ...

(h) 9, 7, 5, 3, ...

(i) 23, 19, 15, 11, ...

(j) 12, 7, 2, -3, ...

(k) -7, -4, -1, 2, ...

(l) -11, -1, 9, 19, ...

(m) 63, 55, 47, 39, ...

(n) 10, 24, 38, 52, ...

(o) 7, 27, 47, 67, ...
2.
(a) Find the nth term of the sequence 6, 11, 16, 21, ...
(b) Use your nth term formula to find the 50th term in the sequence.

3.
(a) Find the nth term of the sequence 12, 15, 18, 21, ...
(b) Use your nth term formula to find the 20th term in the sequence.

4.
(a) Find the nth term of the sequence 7, 15, 23, 31, ...
(b) Use your nth term formula to find the 50th term in the sequence.

5.
(a) Find the nth term of the sequence 5, 14, 23, 32, ...
(b) Use your nth term formula to find the 100th term in the sequence.

6.
(a) Find the nth term of the sequence 20, 17, 14, 11, ...
(b) Use your nth term formula to find the 50th term in the sequence.
7.  
(a) Find the nth term of the sequence 6, 10, 14, 18, ...

(b) Is 90 in the sequence?

(c) Is 164 in the sequence?

8.  
(a) Find the nth term of the sequence 5, 16, 27, 38, ...

(b) Is 114 in the sequence?

(c) Is 258 in the sequence?

9.  
(a) Find the nth term of the sequence 11, 17, 23, 29, ...

(b) Is 203 in the sequence?
10.  
(a) Find the nth term of the sequence 9, 16, 23, 30, ...  
(b) Use your nth term formula to find the 100th term in the sequence.  
(c) Is 149 in the sequence?  

11.  
(a) Find the nth term of the sequence 1, 7, 13, 19, ...  
(b) Use your nth term formula to find the 40th term in the sequence.  
(c) Is 347 in the sequence?  

12.  
(a) Find the nth term of the sequence 10, 19, 28, 37, ...  
(b) Use your nth term formula to find the 200th term in the sequence.  
(c) Is 176 in the sequence?
13. 
(a) Find the nth term of the sequence 31, 28, 25, 22, ...

(b) Use your nth term formula to find the 50th term in the sequence.

(c) Is -40 in the sequence?

14. 
(a) Find the nth term of the sequence -19, -13, -7, -1, ...

(b) Use your nth term formula to find the 100th term in the sequence.

(c) Is 125 in the sequence?

15. 
(a) Find the nth term of the sequence 15, 33, 51, 69, ...

(b) Use your nth term formula to find the 25th term in the sequence.

(c) Is 555 in the sequence?
16. A sequence has $n$th term $3n + 7$.

Find the difference between the $5^{th}$ and $20^{th}$ terms in the sequence.

17. A sequence has $n$th term $4n - 5$.

Carl says “26 is a term in the sequence”.
Is Carl correct?

18. The first three terms of a linear sequence are 8, 17 and 26.

(a) Find the $20^{th}$ term in the sequence.

(b) Find the difference between the $25^{th}$ and $30^{th}$ terms in the sequence.

19. A sequence has $n$th term $n^2 + 11$.

Find the difference between the $5^{th}$ and $8^{th}$ terms in the sequence.
20.
A sequence has nth term $3n + q$.
The first term in the sequence is 11.

(a) Find $q$.

(b) Hence find the 12$^{\text{th}}$ term in the sequence.

21.
A and B are linear sequences.
The first three terms of Sequence A are 7, 15 and 23.
Sequence B has nth term $4n + 2$.

Rob says “There is a number that appears in both sequences”.
Explain why Rob is incorrect.

22.
A sequence has nth term $3n^2$.

(a) Find the 10$^{\text{th}}$ term in the sequence.

(b) Is 75 in the sequence?

Another sequence has nth term $2n^2 - 5$.

(c) Show that the number 3 appears in both sequences.
23. A sequence has nth term \(4n + y\).
The third term in the sequence is 9.
Find y.

24. A linear sequence has nth term \(an + b\).
The second term in the sequence is 16.
The fourth term in the sequence is 22.
Find a and b.

25. Sequence X has nth term \(4n - 7\).
Sequence Y has nth term \(20 - 3n\).
Claire says “There is only one number that appears in both sequences”.
Show that Claire is incorrect.