

QUADRATIC SEQUENCES

Task 1

- 1) Find the next term in the sequence:
2, 5, 10, 17, 26
- 2) Find the next term in the sequence:
1, 4, 9, 16, 25
- 3) Find the next term in the sequence:
3, 8, 14, 21, 29
- 4) Find the next term in the sequence:
5, 9, 16, 26, 39
- 5) Find the next term in the sequence:
10, 7, 0, -11, -26
- 13) Find the n^{th} term of the quadratic sequence:
3, 9, 19, 33, 51
- 14) Find the n^{th} term of the quadratic sequence:
4, 9, 18, 31, 48
- 15) Find the n^{th} term of the quadratic sequence:
5, 11, 23, 41, 65
- 16) Find the n^{th} term of the quadratic sequence:
2, 1, -2, -7, -14

Task 2

- 6) Find the first 5 terms of the sequence given by
$$a_n = n^2 + 2n$$
- 7) Find the first 5 terms of the sequence given by
$$a_n = n^2 - n$$
- 8) Find the first 5 terms of the sequence given by
$$a_n = 2n^2$$
- 9) Find the first 5 terms of the sequence given by
$$a_n = 4n^2 + 3$$
- 10) Find the first 5 terms of the sequence given by
$$a_n = -n^2 + 6n + 1$$
- 17) Find the n^{th} term of the quadratic sequence:
6, 7, 14, 27, 46
- 18) Find the n^{th} term of the quadratic sequence:
0, -3, -9, -18, -30
- 19) a. Find the n^{th} term of the quadratic sequence:
3, 7, 13, 21, 31
b. Is 111 a term in the sequence?
- 20) a. Find the n^{th} term of the quadratic sequence:
10, 7, 2, -5, -14
b. Is -133 a term in the sequence?

Task 3

- 11) Find the n^{th} term of the quadratic sequence:
2, 5, 10, 17, 26
- 12) Find the n^{th} term of the quadratic sequence:
3, 8, 15, 24, 35

Challenge

- 21) Two quadratic sequences have n^{th} terms:
Sequence A: $u_n = an^2 + bn + c$
Sequence B: $v_n = 2n^2 - n + 3$
The 5th, 10th and 14th terms of Sequence A are 57, 212 and 408 respectively.
Find the values of a , b , and c .
Hence, find the value of n for which $u_n = v_n$.