Finding the Nth Term

Step 1

- Find the first number in the sequence

Step 2

- Find the difference between the numbers in the sequence

Step 3

- The difference between the numbers in the sequence is the Nth term – If the difference is 2, the Nth term will be 2N
- Now look at the first number in the sequence, this determines how much + or – the Nth term is – If the sequence started at 1 and the difference was 2 (1,3,5,7,9,11) – the formula would be 2N – 1.

Task 1

Look at the example below for the sequence 3N – 5

Eg. -2, 1, 4, 7, 10, 13

Now write the first 6 terms for each of the following formula:

1. N + 3
2. 2N -2
3. 5N + 7
4. 2N – 5
5. 7N – 1
6. 4N + 1
7. 3N + 18
8. 10N – 3
9. 16N
10. 7N – 9

Task 2

Look at the example below:

Eg. 1, 7, 13, 20, 26, 32

- The first number in the sequence is 1
- The difference is 6
- Therefore the formula is 6N - 5

Now work out the Nth term formula for the following sequences

1. 16, 32, 48, 64, 80, 96, 112
2. 7, 17, 27, 37, 47, 57, 67, 77
3. 21, 24, 27, 30, 33, 36, 39, 41
4. 6, 13, 20, 27, 33, 40, 47, 54
5. 5, 9, 13, 17, 21, 25, 29, 33
6. 1, 31, 61, 91, 121, 151, 181, 211
7. 6, 4, 2, 0, -2, 14, -6
8. 8, 9, 10, 11, 12, 13, 14, 15
9. 9, 11, 13, 15, 17, 19, 21, 23
10. 11, 19, 27, 35, 42, 49, 56, 63

Well done – You Have successfully worked out how to complete the Nth term!

Answers:

Task 1

1. 4, 5, 6, 7, 8, 9
2. 0, 2, 4, 6, 8, 10
3. 12, 17, 22, 27, 32, 37
4. -3, -1, 1, 3, 5, 7
5. 6, 13, 20, 27, 34, 41
6. 5, 9, 13, 17, 21, 25
7. 21, 24, 27, 30, 33, 36
8. 7, 17, 27, 37, 47, 57
9. 16, 32, 48, 64, 80, 96
10. -2, 7, 16, 25, 34, 43

Task 2

1. 16N
2. 10N – 3
3. 3N +18
4. 7N -1
5. 4N + 1
6. 30N – 29
7. N + 7
8. -2N + 8
9. 2N + 7
10. 8N + 3