



# Maths-it Podcast F-12

Foundation GCSE Revision

## Sequences

### Topics

Generate a sequence from term to term or position to term rules

Find the  $n$ th term of a linear sequence

Generate common sequences, squares, cubes, powers of 2, etc.

### Questions



1. Reece and Tris are studying a number pattern.

The first three numbers in the number pattern are 1, 3, 7

Reece says that the next number is 13.

Tris says the next number is 15.

Explain why both Reece and Tris could be right.

.....  
.....  
.....

(Total 2 marks)

2. Here are the first five terms of a number sequence.

11 16 21 26 31

(a) Write down the next **two** terms of the sequence.

....., .....

(2)

(b) Explain how you found your answer.

.....

(1)

(c) Explain why 248 is **not** a term of the sequence.

.....  
.....

(1)

(Total 4 marks)



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3. Here are the first five terms of a number sequence.

97    91    85    79    73

(a) Write down the next two terms of the number sequence.

..... , .....

(1)

(b) Explain how you found your answer.

.....

(1)

The 20th term of the number sequence is -17

(c) Write down the 21st term of the number sequence.

.....

(1)

**(Total 3 marks)**

4. Here are some terms in a number sequence

	1
	1
1+1	2
1+2	3
2+3	5
3+5	8
5+8	.....
.....	.....
.....	.....

(a) Complete the table.

(3)

Here is a similar number pattern,

1, 4, 5, 9, 14, 23, ...

(b) Write down the next two terms in the sequence.

..... , .....

(2)

**(Total 5 marks)**



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5. The first term of a sequence is 3.  
The rule for the sequence is **Add 4 to the previous term.**

(a) Write down the second term and the third term of the sequence.

..... , ..... (1)

(b) Work out the 10th term of the sequence.

..... (2)

(c) Write down an expression, in terms of  $n$ , for the  $n$ th term of the sequence.

..... (2)  
**(Total 5 marks)**

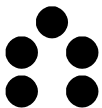
6. The first five terms of an arithmetic sequence are

2    13    24    35    46

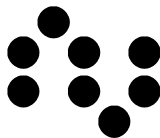
Write down, in terms of  $n$ , an expression for the  $n$ th term of this sequence.

.....  
**(Total 2 marks)**

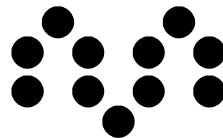
7. Here are some patterns made from dots.



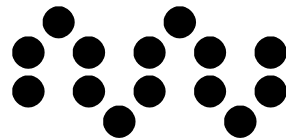
Pattern 1



Pattern 2



Pattern 3



Pattern 4

Write down a formula for the number of dots,  $d$ , in terms of the Pattern number,  $n$ .

**(Total 2 marks)**