



Sequences Exam Practice

Q1. a) Write down the next two terms in the following sequence:

3, 7, 11, 15, 19,

(2 marks)

b) Find an expression for the n^{th} term of this sequence.

(2 marks)

Q2. a) Write down the next two terms in the following sequence:

16, 13, 10, 7, 4,

(2 marks)

b) Find an expression for the n^{th} term of this sequence.

(2 marks)

Q3. a) Write down the next two terms in the following sequence:

-2, 5, 12, 19, 26,

(2 marks)

b) Find an expression for the n^{th} term of this sequence.

(2 marks)

Q4. a) Write down the 1st, 2nd and 10th terms of the following sequence which has n^{th} term given by:

$$3n + 9$$

(2 marks)

b) Is the term 729 in the sequence? You must show your reasoning.

(2 marks)

Q5. a) Write down the 3rd, 5th and 20th terms of the following sequence which has n^{th} term given by:

$$-12n + 6$$

(2 marks)

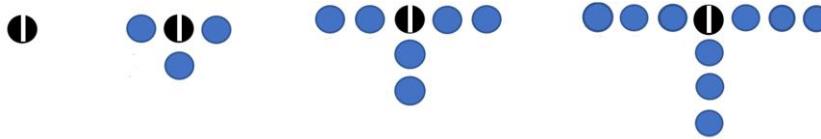
b) Is the term 336 in the sequence? You must show your reasoning.

(2 marks)



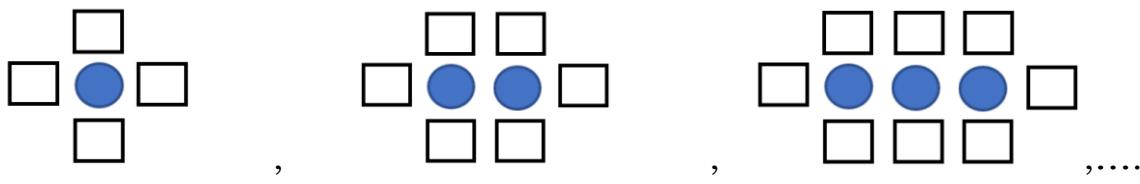
Applied Mixed Practice Problems

Q6. Here is a pattern made from shaded and striped circular dots:



- Find an expression for the number of dots in the n^{th} pattern. (2 marks)
- How many dots will there be in pattern 40? (2 marks)
- Work out which pattern has 426 non-striped dots. (2 marks)

Q7. Here is a sequence formed by circles and squares:



- How many squares will there be in the n^{th} pattern? (2 marks)
- How many circles are needed for the pattern which has 48 squares? (2 marks)

Q8. Here are two sequences:

Sequence A: 173, 171, 169, 167,....

Sequence B: 11, 15, 19, 23,....

What is the first number which both sequence A and sequence B share? (4 marks)

Q9. The following sequence is a Fibonacci sequence:

3, __, __, 19, 30,

- Work out the missing 2nd and 3rd terms (2 marks)
- Work out the 8th term of the sequence. (2 marks)

Q10. Work out which is the largest term of the sequence $2n - 9$ which is under 1000. (3 marks)