1 (a) A Fibonacci-type sequence starts 3 –8

The sequence is continued by adding the previous two terms.

Work out the next **two** terms.

[2 marks]

Answer _____ and _____

2 The 5th term of a linear sequence is 17

The 6th term of the sequence is 21

Work out the 100th term of the sequence.

[3 marks]

Answer _____

3 (a) The term-to-term rule for a sequence is

add 4 then divide by 2

The 1st term of the sequence is 36

Work out the 3rd term.

[2 marks]

Answer _____

3 (b) The term-to-term rule for a different sequence is

divide by 3 then add 10

The 2nd term of this sequence is 60

Work out the 1st term.

[2 marks]

Answer _____

4 Here is a rule for a sequence.

After the first two terms, each term is the sum of the previous two terms.

The first five terms are p 23 q 57 r

Work out the values of p, q and r.

[2 marks]

$p =$ _____

$q =$ _____

$r =$ _____

5 The nth term of a sequence is $19 - 4n$

What is the **smallest** value of n that gives a negative term?

[2 marks]

Answer _____

6 (a) The term-to-term rule for a sequence is

multiply by 2

The 3rd term of the sequence is 46

Work out the 1st term.

Give your answer as a decimal.

[3 marks]

Answer _____

6 (b) The term-to-term rule for a different sequence is

subtract k

The 1st term is 34

The 4th term is 10

Work out the value of k.

[3 marks]

$k =$ _____

7 A is an **arithmetic** progression.

Here are the first four terms.

13 16 19 22

G is a **geometric** progression.

Here are the first four terms.

2 4 8 16

nth term of A = 8th term of G

Work out the value of n.

[4 marks]

$n =$ _____

8 A linear sequence starts

7 10 13 16

Work out an expression for the *n*th term of the sequence.

[2 marks]

Answer _____

9 (a) The term-to-term rule for a sequence is

subtract 1 then multiply by 5

The 1st term is 4

Work out the 3rd term.

[2 marks

Answer _____

9 (b) The term-to-term rule for a different sequence is

add 20 then divide by 2

The 2nd term is 50

Work out the 1st term.

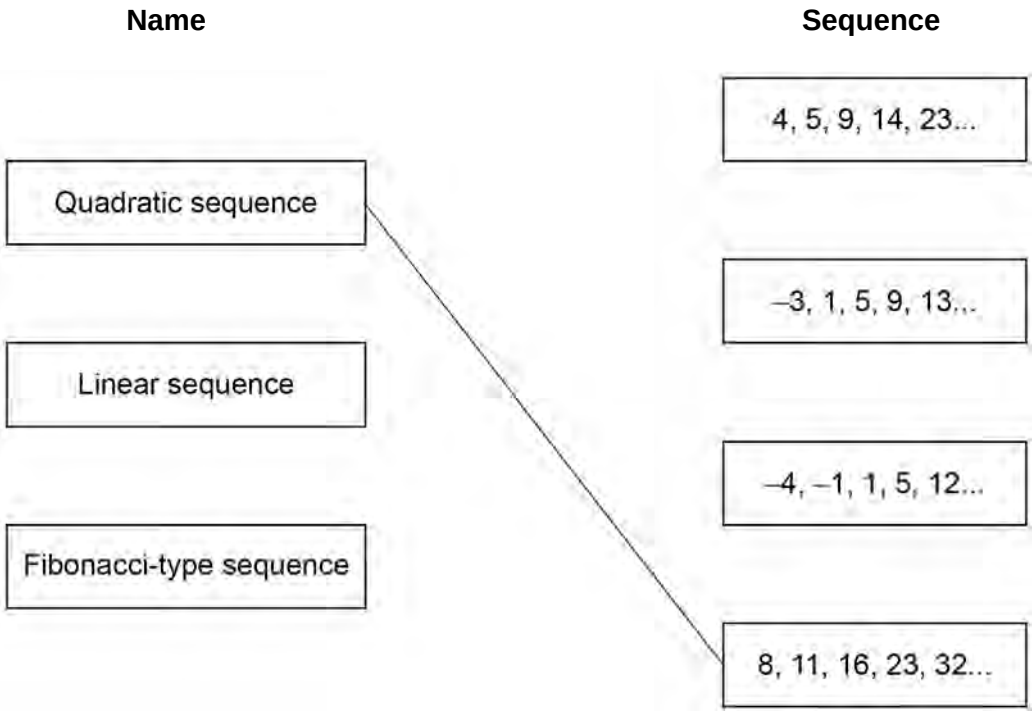
[2 marks

Answer _____

10 Match the name to the correct sequence.

One has been done for you.

[2 marks]



11

x	0	2	4	6	8	
y	3	7	11		19	23

The x-values in the table make a linear sequence.

The y-values in the table make a different linear sequence.

11 (a) Complete the table.

[2 marks]

12 Event A has taken place every 4 years.

Event B has taken place every 3 years.

Both events took place in 2019

Work out the last year, before 2019, when both events took place.

[2 marks]

Answer _____

13 (a) Here is the rule for a sequence.

After the first two terms, each term is the sum of the previous two terms

The 1st term is 33

The 2nd term is x

The 4th term is 73

Work out the value of x.

[3 marks]

$x =$ _____

13 (b) An expression for the nth term of a different sequence is $n - n^2$

Ruth says,

''All the terms will be negative because n^2 is always greater than n.''

Is she correct?

Tick a box.

☐ Yes ☐ No

Give a reason for your answer.

[1 mark]

14 A linear sequence has

- 1st term = 10
- 1st term + 2nd term = 39

Work out the 5th term.

[4 marks]

Answer _____

15 A linear sequence begins

2 5 8 11

Work out an expression for the nth term.

[2 marks]

Answer _____

16 Here are the first three terms of a linear sequence.

5 11 17

16 (a) Write down the next term.

[1 mark]

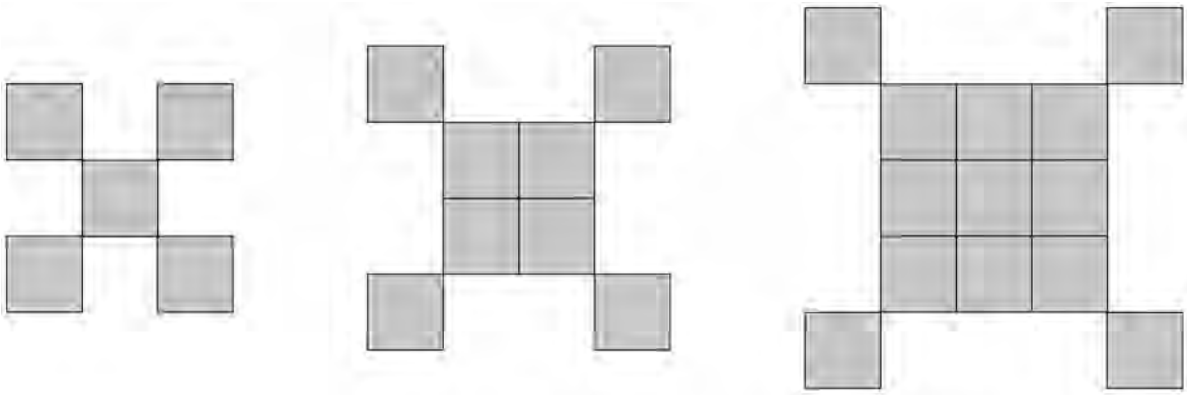
Next term _____

16 (b) Describe the term-to-term rule.

[1 mark]

Term-to-term rule _____

17 Here are the first three Patterns in a sequence made up of small squares.



Pattern 1 Pattern 2 Pattern 3

17 (a) On the grid, draw Pattern 4

[1 mark]

17 (b) The expression for the number of small squares in Pattern n is $n^2 + 4$

Work out the least value of n for which the number of small squares is greater than 500

[1 mark]

$n =$ _____