In the style of

AQA

General Certificate of Secondary Education
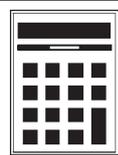Foundation Tier

Mathematics **43602F**

Past Paper Type Questions by Topic

Sequences

F

For this paper you must have:
- a calculator
- mathematical instruments.

Time allowed
- 1 hour

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is.
- The quality of your written communication is specifically assessed in some questions . These questions are indicated with an asterisk (*)
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

Advice
- In all calculations, show clearly how you work out your answer.

By Peter Bland

1 Write down the next term in each sequence.

1 (a)(i) 5   8   11   14   ....

...........................…………...……….....…………………………………………..

(1 mark)

1 (a)(ii) 6   4   2   0   ....

...........................…………...……….....…………………………………………..

(1 mark)

1 (a)(iii) 2   4   8   16   ....

...........................…………...……….....…………………………………………..

(1 mark)

1 (b) The numbers in this sequence increase by the same amount each time.

11   35

What are the missing numbers?

...........................…………...……….....………………………………………………

Answer………………and…………………….

(2 marks)

2   The nth term of a sequence is $100 - 3n$.

2 (a)   Work out the first three terms.

....…………...……......……………………………………………

....…………...……......……………………………………………

....…………...……......……………………………………………

Answer ....,..............................,...................

(2 marks)

2 (b)   Work out the first term of the sequence that is a minus number.

...........................…………...……….....………………………………………………..…..

...........................…………...……….....………………………………………………..…..

Answer ....

(2 marks)

3 (a) Here are the first three terms of a sequence.

$$20 \qquad 12 \qquad 8 \qquad ....$$

The term to term rule for working out the next term in the sequence is

Add 4 to the previous term and then divide by 2

Work out the first term that is **not** a whole number.

....…………....………………………………………………

......................................…………....………....……………………………………………………

Answer ....…………...………....………

(2 marks)

3 (b) This sequence uses the same rule.

Add 4 to the previous term and then divide by 2

The third term of this sequence is 9.

$$.... \qquad .... \qquad 9 \qquad ....$$

Work out the first term.

..................................…………..………....…………………………………………………..

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Answer ....…………..……….....……… *(3 marks)*

4 (a) Write down the next term in each of these sequences.

4 (a) (i)   3   8   13   18   ....

....……….....………....………………………………………………..

(1 mark)

4 (a) (ii)   5.1   5.3   5.5   5.7   ....

....……….....………....………………………………………………..

(1 mark)

4 (a) (iii)   2   −1   −4   −7   ....

....……….....………....………………………………………………..

(1 mark)

4 (b) Here is another sequence.
The third term is 20 and the fourth term is 36.

    ……   ……   20   36   ……

 The term to term rule for this sequence is

Double and subtract four

Work out the first term of the sequence.

....……….....………....………………………………………………..

....……….....………....………………………………………………..

....……….....………....………………………………………………..

                    Answer .... *(2 marks)*

5 (a) The numbers in this sequence go down by the same amount each time.

74 ...... 58 50 42 ......

Work out the **two** missing numbers.

....

Answer .... and .... *(2 marks)*

5 (b) The numbers in this different sequence go down by the same amount each time.

26 6

What are the **three** missing numbers?

....

....

....

....

Answer .... , ... , ... *(2 marks)*

6 (a) Here are the first two terms of a sequence.

     5   4   ……   ……   ……

The term to term rule for finding the next term in the sequence is

Multiply the previous term by 2 and subtract 6

Work out the first negative term of the sequence.

....

....

          Answer .... *(2 marks)*

6 (b) Here are the first three terms of another sequence.

     1   4   7   ……   ……   ……

Which of the following is the nth term for this sequence?
Circle the correct answer.

....

....

....

          $n + 3$ $3n + 1$ $3n - 2$ $3n + 2$

          (1 mark)

7 (a)   A sequence starts

           49   46   43   40

7 (a) (i)   Write down the next two terms.

           Answer .... and ....   *(2 marks)*

7 (a) (ii) What is the rule for continuing the sequence?

           Answer ....   *(1 mark)*

7 (b)   Another sequence starts

           57   50   43   36

This sequence is continued.

What is the first negative number in this sequence?

....

....

           Answer ....   *(1 mark)*

7 (c)   The first sequence is also continued.
The two sequences have the number 43 in common.

What is the next number that the two sequences have in common?

....

....

           Answer ....   *(2 marks)*

8 (a) Here are the first two terms of a sequence.

5   4   ……   ……

The term to term rule for finding the next term in the sequence is

Multiply the previous term by 2 and subtract 6

Work out the first negative term of the sequence.

....

....

Answer .... *(2 marks)*

8 (b) Here are the first three terms of another sequence.

4   7   10   ……   ……

Which of the following is the nth term for this sequence?

Circle the correct answer.

....

....

....

$n + 3$ $3n + 1$ $3n - 2$ $3n + 2$ *(1 mark)*

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED