Intermediate Maths June 2017 P1 Q1a

(a) Write down the next two numbers in the following sequence. [2]

35, 25, 16, 8, ..., ...

Intermediate Maths Sample 1 P1 Q2a

(*a*) Write down the next two numbers in the following sequence. [2]

18 17 14 9 ....

Intermediate Maths Summer 2019 P1 Q4

(a) Write down the next two numbers in the following sequence. [2]

−19 −15 −11 −7 ....

(b) Rods are used to make a sequence of patterns as shown below.

Pattern 1 Pattern 2 Pattern 3

Pattern 1 uses six rods.

(i) How many rods are required to draw Pattern 4? [1]

(ii) Pattern 37 requires 186 rods.
How many rods are required to draw Pattern 38? [1]

(c) Describe in words the rule used in the following sequence. [1]

243 81 27 9 .....

Intermediate Maths Nov 2016 P1 Q4a

(a) Write down the next two numbers in the following sequence. [2]

33 26 19 12 ....

Intermediate Maths Nov 2017 P1 Q5a

(a) Write down the next two numbers in the following sequence. [2]

22 21 18 13 ....

Intermediate Maths Nov 2018 P2 Q6c

(c) The nth term of a sequence is given by $3n - 20$.

(i) What is the value of the 6th term? [1]

(ii) Consider the following statement.

'There are no odd numbers greater than 50 in this sequence.'

Show that this statement is incorrect. [1]

Intermediate Maths June 2017 P2 Q6

(a) Write down the first three terms of the sequence whose nth term is given by $2n - 5$. [2]

(b) Write down an expression for the nth term of the following sequence. [2]

7, 11, 15, 19, ...

Intermediate Maths Summer 2018 P1 Q6

(a) The table below shows the first five terms of a sequence of numbers.

Term	t_1	t_2	t_3	t_4	t_5
Value	2	5	8	11	14

Circle the correct equation that connects terms t_6 and t_7. [1]

$t_6 = t_7 + 3$ $t_7 = t_6 + 14$ $t_7 - t_6 = 1$ $t_7 = t_6 - 3$ $t_7 = t_6 + 3$.

(b) The nth term of another sequence is given by $2n - 11$.

Write down the value of,

(i) the 10th term, [1]

(ii) the 3rd term. [1]

Intermediate Maths Summer 2019 P2 Q9a

(a) Write down the nth term of the following sequence. [2]

8, 11, 14, 17, ...

Intermediate Maths Nov 2016 P2 Q10

(a) Write down the nth term of the following sequence. [2]

3, 4, 5, 6, ...

(b) The nth term of a different sequence is given by $n^2 + 7$.

(i) Write down the first three terms of this sequence. [2]

1st term = ... 2nd term = ... 3rd term = ...

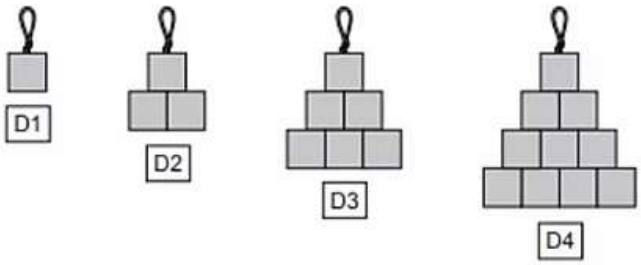
(ii) Which **term** in this sequence is the first that has a value greater than 85? [2]

Intermediate Numeracy Summer 2017 P1 Q9

Ollie and Josef both have jobs in a workshop that makes decorations.

They make decorations using small squares of stained glass.

(a) Ollie has made the following decorations.



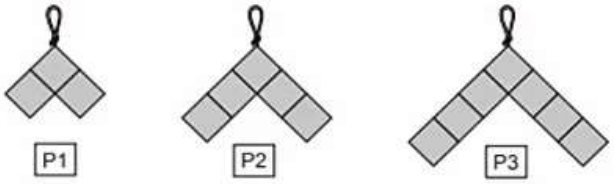
He labels the first decoration D1.
He labels the next 3 decorations in order, D2, D3 and D4.

He continues to make decorations and labels following this pattern.

(i) After making decoration D5, Ollie notices he only has 10 small squares of stained glass left.
How many **more** squares of stained glass will Ollie need to make decoration D6? [2]

(ii) Ollie uses a rule to work out how many squares he needs for each decoration.
He states that to make decoration D10 he would need 55 squares.
Is Ollie correct?
You must show your working. [1]

(b) Josef has made the following three decorations using small squares of stained glass.



Josef labels these patterns P1, P2 and P3 in order.

Josef continues to make decorations following the pattern he has started.

(i) How many **more** squares would he need to make pattern P22 than to make pattern P18? [1]

(ii) Josef has 22 squares.

Josef states,

'I think I can make one complete decoration using **all** 22 squares, with none left over.'

Is Josef correct?

Yes ☐ No ☐

Give a reason for your answer. [1]

(iii) Each small square of stained glass measures 0·5 cm by 0·5 cm.
The perimeter of one of Josef's decorations is 10 cm.
Complete the label that Josef would use for this decoration. [2]

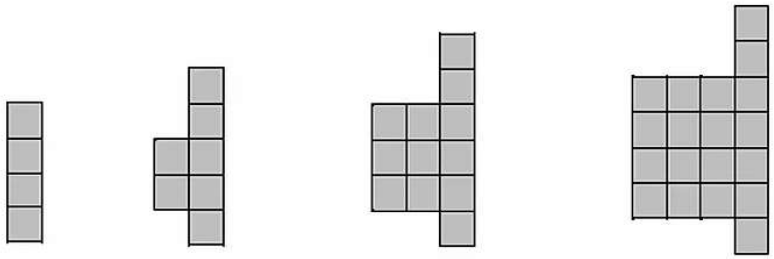
Intermediate Maths Nov 2017 P2 Q14b

(b) Write down the nth term of the following sequence. [2]

3, 6, 11, 18, 27, ...

Intermediate Maths Sample 1 P1 Q17

The diagram shows the first four patterns of a sequence.



1 2 3 4

Find an expression for the number of squares in the nth pattern of the sequence. [2]
