

Higher Maths Summer 2019 P2 Q1a

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

8, 11, 14, 17,

Higher Maths Nov 2016 P2 Q2

The n th term of a sequence is given by $n^2 + 7$.

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

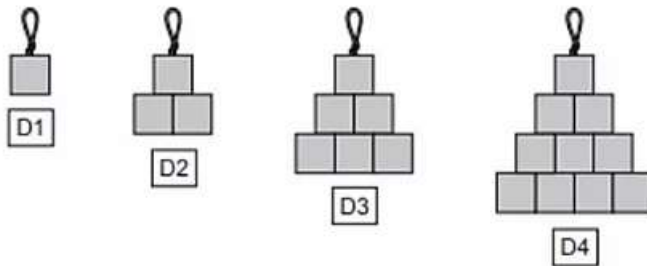
1st term = 2nd term = 3rd term =

Higher Numeracy Summer 2017 P1 Q4

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.



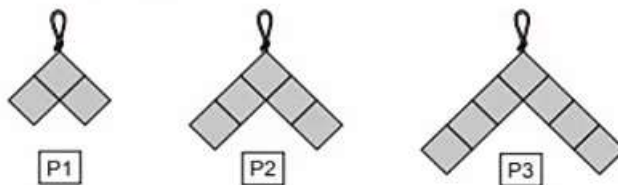
He labels the first decoration D1.
He labels the next 3 decorations in order, D2, D3 and D4.

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]

Higher Maths Nov 2017 P2 Q6b

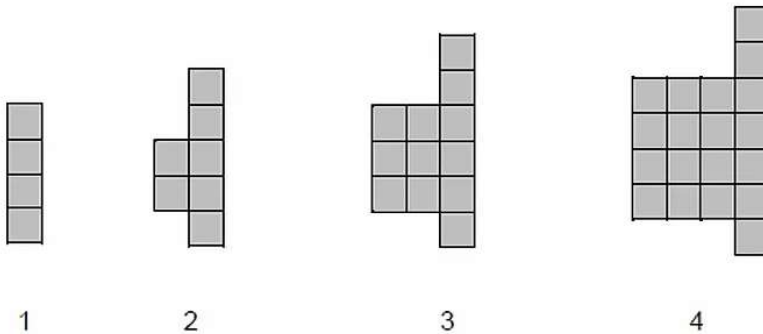
(b) Write down the n th term of the following sequence.

[2]

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

Higher Maths Sample 1 P1 Q8

The diagram shows the first four patterns of a sequence.



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