

Year 10 – HL15 - Sequences

Q1 Find the n th term for these sequences.

a 1, 4, 7, 10, ...

b -1, 3, 7, 11, ...

c 3, 6, 11, 18, ...

d 0, 7, 26, 63, 124, ...

e 3, 12, 27, 48, ...

f 2, 16, 54, 128, 250, ...

g 10, 100, 1000, 10000, ...

h 3, 9, 27, 81, ...

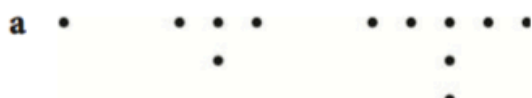
Q2 Write down the first four terms of these sequences.

a $u_n = 2n - 3$

b $u_n = n^3 - n^2$

c $u_n = \frac{n^2}{2n+3}$

Q3 Here are some patterns made from dots.



For each:

- i. Draw up a sequence table for the first six elements in each pattern, taking care to use the correct letter for the pattern number and the correct letter for the number of dots.
- ii. Find a formula for the number of dots used in terms of the pattern number.
- iii. Use your formula to find the number of dots in the 250th pattern.