

1 Term to term rules

- a) 41, 35, 29, 23, ... Write the rule and the next two terms.
- b) 2, 10, 50, ... Write the rule and the next term.

a) subtract 6: 17, 11

b) multiply by 5: 250

2 Term to term rules: missing terms

- a) Fill in the missing terms. 8, , , 26
- b) The rule is multiply by 3. The 3rd term is 45. Find the 1st term.

a) $26 - 8 = 18$, $18 \div 3 = 6$: 14, 20

b) $45 \div 3 = 15$, $15 \div 3 = 5$

3 Square and triangular numbers

- a) Write the 6th square number and the 6th triangular number.
- b) Which number between 30 and 40 is square and triangular?



Square numbers



Triangular numbers

a) $6 \times 6 = 36$; $1 + 2 + \dots + 6 = 21$

b) 36: 6×6 and $1 + 2 + \dots + 8$

4 Fibonacci type sequences

Each term is the sum of the two terms before it.

- a) 2, 5, 7, 12, ... Write the next two terms.
- b) The 1st term is 3 and the 3rd term is 11. Find the 2nd term and the 5th term.

a) 19, 31

b) $11 - 3 = 8$

3, 8, 11, 19, 30: 5th term 30

Sequences revision mat answers

Foundation A

5 The n th term: finding it

Find the n th term of each sequence.

- a) 7, 11, 15, 19, ...
- b) 25, 21, 17, 13, ...

a) $+ 4$ each time, $4 \times 1 = 4$, $7 - 4 = 3$
 $4n + 3$

b) $- 4$ each time: $29 - 4n$

6 The n th term: using it

The n th term of a sequence is $4n + 7$.

- a) Work out the 10th term.
- b) Is 90 a term in this sequence? Show how you know.

a) $4 \times 10 + 7 = 47$

b) $4n + 7 = 90$, $4n = 83$

$n = 20.75$, not whole: no

7 The n th term: patterns

Here are patterns made from sticks.

- a) Find an expression for the number of sticks in Pattern n .
- b) Which pattern uses 76 sticks?



Pattern 1



Pattern 2



Pattern 3

a) $+ 5$ each time: $5n + 1$

b) $5n + 1 = 76$: Pattern 15

8 Types of sequences

P 2, 6, 18, 54 Q 3, 4, 7, 11 R 40, 33, 26, 19

- a) Is each sequence linear, geometric or Fibonacci type?
- b) Write the next term of each sequence.

a) P geometric, Q Fibonacci type, R linear

b) P 162, Q 18, R 12