

KS3 – Sequences

Section A – Term-to-Term Rules

Q1 (4 marks)

Write down the next two terms in each sequence.

a) 4, 7, 10, 13, __, __

b) 20, 16, 12, 8, __, __

c) 5, 10, 15, 20, __, __

d) 31, 25, 19, 13, __, __

Q2 (4 marks)

State the term-to-term rule for each sequence.

a) 3, 8, 13, 18, ...

b) 40, 34, 28, 22, ...

c) 7, 14, 21, 28, ...

d) 50, 42, 34, 26, ...

Q3 (3 marks)

Complete each sequence.

a) -8, -3, 2, __, __

b) 12, 5, -2, __, __

c) -15, -9, -3, __, __

Q4 (3 marks)

Write down the next two terms in each sequence.

a) 2, 4, 8, 16, __, __

b) 81, 27, 9, 3, __, __

c) 3, 6, 12, 24, __, __

Q5 (3 marks)

State the term-to-term rule for each sequence.

a) 5, 15, 45, 135, ...

b) 160, 80, 40, 20, ...

c) 2, 8, 32, 128, ...

Q6 (3 marks)

Complete each sequence using its term-to-term pattern.

a) 1, 4, 9, 16, __, __

b) 2, 5, 10, 17, __, __

c) 3, 6, 11, 18, __, __

Challenge

Q7 (3 marks)

The first term of a sequence is 4. Each new term is found by multiplying the previous term by 2 and then subtracting 1.

Write down the next three terms of the sequence.

Section B – nth Term

Q8 (4 marks)

Find the nth term of each sequence.

a) 3, 6, 9, 12, ...

b) 5, 10, 15, 20, ...

c) 4, 7, 10, 13, ...

d) 8, 12, 16, 20, ...

Q9 (4 marks)

Find the nth term of each sequence.

a) 6, 10, 14, 18, ...

b) 2, 7, 12, 17, ...

c) 11, 18, 25, 32, ...

d) 20, 28, 36, 44, ...

Q10 (3 marks)

Find the n th term of each sequence.

a) 12, 9, 6, 3, ...

b) 20, 15, 10, 5, ...

c) 7, 5, 3, 1, ...

Q11 (3 marks)

Use the n th term given to find the specified term.

a) n th term = $4n + 3$. Find the 10th term.

b) n th term = $7n - 2$. Find the 12th term.

c) n th term = $25 - 3n$. Find the 8th term.

Q12 (3 marks)

Write down the first three terms of each sequence.

a) n th term = $5n + 1$

b) n th term = $3n - 4$

c) n th term = $18 - 2n$

Q13 (3 marks)

Decide whether the number given is a term of the sequence. Show your working.

a) n th term = $4n + 1$. Is 41 a term?

b) n th term = $6n - 1$. Is 40 a term?

c) n th term = $5n + 3$. Is 63 a term?

Challenge

Q14 (3 marks)

A sequence has n th term $7n - 5$.

Which term of the sequence is equal to 100?

Q15 (4 marks)

The 5th term of a linear sequence is 18 and the 9th term is 30.

a) Find the common difference.

b) Find the n th term of the sequence.

Total: ____ / 50

Percentage: ____%