The Panda Math Tutor

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Sequences

Student Worksheet

Questions & Working Space

IGCSE Mathematics

Name: _____

Date: _____

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Note

How to use this worksheet. These questions are built *strictly* on the *Sequences* notes: key definitions, term-to-term and position-to-term rules, linear (arithmetic) sequences, quadratic sequences, geometric sequences, the special sequences, recognising and generating sequences, and using the nth term to solve problems.
Working space. Ruled lines are provided after each question — show *all* of your working there. For any sequence question, start by writing down the first differences; they tell you immediately what kind of sequence you are dealing with. Harder questions have a teal **Hint** box; try the question first and use the hint only if you are stuck.
Always check. Substitute at least two values of n back into your nth term formula before you move on. This one habit catches nearly every error in this topic.
Checking your answers. Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet *"Sequences — Solutions & Answer Key."* Try each question honestly before you look.

1 Part I — Topic-by-Topic Exercises

1.1 Key Definitions and Rules

Exercise D1 *[Basic]*

For the sequence $6, 13, 20, 27, 34, \ldots$ write down:

(a) a_1 (b) a_4 (c) the term-to-term rule

Exercise D2 *[Basic]*

Write down the first four terms of the sequence described by the term-to-term rule: *start at* 40 *and subtract* 6 *each time.*

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Exercise D3 *[Standard]*

Write down the first five terms of the sequence whose nth term is $a_n = 4n + 5$.

Exercise D4 *[Standard]*

Write down the first four terms of the sequence whose nth term is $a_n = n^2 + 3$.

Exercise D5 *[Intermediate]*

Consider the sequence $2, 9, 16, 23, \ldots$

(a) Write down its term-to-term rule.

(b) Write down its position-to-term rule (nth term).

(c) Explain which rule you would use to find the 100th term, and why. Then find that term.

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Preview ends here

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