

Finding a quadratic nth term answers

Pearson Edexcel GCSE Mathematics 1MA1 • L023

Teacher use only • A25 Higher • Lesson resources

REACH FOR THE STAR | GCSE MATHEMATICS

Prerequisites: Linear nth terms; square numbers; substitution.

Higher route: replace the 2-minute A3 feedback and the two 4-minute Challenge discussions with this 10-minute taught extension. Retain core P1–P2. Set HX1–HX2 as the final four minutes of that alternative, and use the shared challenges later if needed. The core route remains 60 minutes; the extension is not an additional compulsory ten minutes. Route choice reflects tier curriculum, not temporary support needs.

H1

Remainders 3,3,3,3,3; n^2+3 .

H2

Remainders 1,1,1,1,1; $2n^2+1$; $n=3$ gives 19.

HX1

Subtract n^2 to obtain constant remainder 4 M1; n^2+4 A1.

HX2

$n=2$ gives 6, not 7 (or another valid mismatch) B1; n^2+n+1 B1.

Diagnostic response

A constant second difference identifies a quadratic-pattern candidate, not the constant term. Halve it to get the n^2 coefficient; then subtract an^2 and find the remaining linear rule. Check every supplied term and the position index, starting at $n=1$.

HX1–HX2 total 4 marks, AO1 2 and AO2 2 as local judgements for review. M=method, A=dependent accuracy, B=independent mark. Accept equivalent exact forms and valid alternatives. Original Reach for the Star questions, not official or endorsed Pearson material.

<https://qualifications.pearson.com/content/dam/pdf/GCSE/mathematics/2015/specification-and-sample-assessment/gcse-maths-2015-specification.pdf>