InkMaths

QUESTION WORKBOOK

Sequences and sigma notation

Sequences and series · Year 12–13

7 questions · 25 marks

PRINT EDITION

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SECTION A · Warm-up

A1 A sequence has nth term $u_n = 2n^2 - 1$. Write down the first three terms, and determine whether 71 is a term of the sequence. [3]

A2 A sequence has $u_1 = 2$ and $u_{n+1} = 2u_n + 1$. Find the first four terms. [2]

SECTION B · Standard

B1 A sequence has $u_1 = 4$ and $u_{n+1} = 12/u_n$. Find the first four terms, and describe the sequence's behaviour. [3]

B2 Evaluate $\Sigma(3r + 2)$ for r running from 1 to 5. [3]

B3 A sequence has $u_n = 50 - 4n$. Find u_{12}, determine which term is the first negative one, and evaluate the sum of the first five terms. [5]

SECTION C · Stretch

C1 A sequence has $u_n = 2n/(n + 1)$. Show that the sequence is increasing, and that every term is less than 2. [5]

C2 Evaluate $\Sigma(2r - 1)$ for r running from 1 to 20, and explain what the answer suggests about sums of odd numbers. [4]