

Algebra 2 - Arithmetic and Geometric Sequences and Series - Test

Common Core F-BF.A.2, A-SSE.B.4, F-IF.A.3 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test on arithmetic and geometric sequences and series has 9 questions worth 20 points in total. The questions move from direct skills to multi-step problems. Show your work, because partial credit is given for a correct setup and sound reasoning.

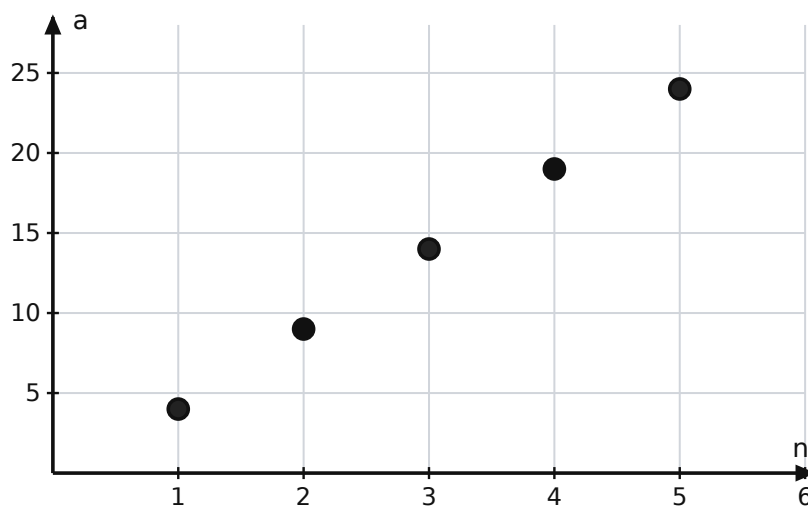
About this test

- Grade: Algebra 2
- Chapter: Arithmetic and Geometric Sequences and Series
- Standards: F-BF.A.2, A-SSE.B.4, F-IF.A.3
- Time: 45 minutes
- Total: 20 points

Question 1 - List the terms [2 pts]

Write the first four terms of $a_n = 2n^2 - 3$.

Question 2 - Arithmetic formula [3 pts]



First five terms of an arithmetic sequence.

The graph shows the first five terms of an arithmetic sequence. Write an explicit formula and find a_{30} .

Question 3 - Geometric formula [2 pts]

Write an explicit formula for $5, 15, 45, \dots$ and find a_6 .

Question 4 - Arithmetic series [3 pts]

Find the sum of the first 25 terms of the arithmetic sequence $a_n = 4n - 1$.

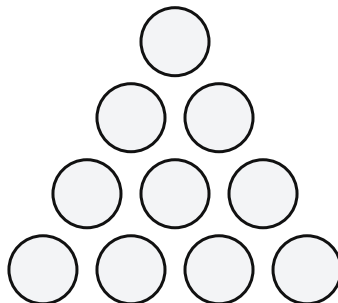
Question 5 - Geometric series [3 pts]

Find the sum of the first 6 terms of $2 + 6 + 18 + \dots$

Question 6 - Recursive formula [2 pts]

Write a recursive formula for $48, 24, 12, 6, \dots$ and find the next two terms.

Question 7 - Stadium seating [2 pts]



$$4 + 3 + \dots + 1 = 10 \text{ logs}$$

A stack of logs with 4 in the bottom row.

A section has 8 seats in the first row and each row has 3 more seats than the previous row. There are 12 rows. How many seats are in the section? (The picture shows a triangular stack for comparison.)

Question 8 - Identify the type [2 pts]

n	1	2	3	4
a(n)	3	9	27	81

Terms of a sequence.

Is the sequence in the table arithmetic or geometric? Write an explicit formula and find a_7 .

Question 9 - Find the error [1 pt]

Jamal used $S_n = \frac{n(a_1 + a_n)}{2}$ for $1+2+4+8+16$ and got 40. Explain the error.