

Sequences & Series (CIMC L0–L5 + Gauss Foundation)

CKSTEM Math Problem Solving · Grades 4–7

Try each problem on your own first — then watch the solution videos.

★ Gauss Pairing

Add every whole number from 1 to 100. That is, find $1 + 2 + 3 + \dots + 100$.

WORK IT OUT HERE

L0 Find the Step

A teacher fills snack bags each day this week. Monday she fills 14 bags, Tuesday 19, Wednesday 24, Thursday 29. If the pattern continues, how many bags will she fill on Friday?

WORK IT OUT HERE

L1 Count the Steps, Not the Calendar

A class makes welcome cards on the odd-numbered days only. On Day 1 they make 20 cards, on Day 3 they make 25, on Day 5 they make 30. If the pattern continues, how many cards will they make on Day 17?

WORK IT OUT HERE

L2 Gauss Pairing (applied)

A community book corner has 15 shelves. The first shelf holds 7 books, the second 8, the third 9, and so on — each shelf holds one more book than the one before. What is the total number of books across all 15 shelves?

WORK IT OUT HERE

L3 Factor Out, Then Pair

At a weekend meal program, the number of lunch boxes packed grows by 6 each day. On Day 1 she packs 12 boxes. After several days the total number of boxes packed is 210. How many days did the packing continue?

WORK IT OUT HERE

L4 Write-It-Twice, Then Combine

A support line starts a phone tree to recruit volunteers. In Round 1, five new volunteers join. In each round after that, the number of new volunteers triples ($\times 3$). The tree stops before any round would add more than 1000 new volunteers. How many new volunteers join altogether?

WORK IT OUT HERE

L5 Inclusion-Exclusion

Find the sum of every positive integer less than 200 that is a multiple of 11 OR a multiple of 13.

WORK IT OUT HERE