Advanced Mathematics Support Programme®

Proof by Exhaustion

A balanced number always has an even quantity of digits. It never starts with a 0.

For a number to be a balanced number, the sum of the first half of the digits is equal to the sum of the second half of the digits.

For example 5133 is a balanced number because 5 + 1 = 3 + 3

Prove that there are 125 different 4 digit balanced numbers can you make if you are only allowed to use the digits 0, 1, 2, 3, 4 and 5?

About the AMSP

- A government-funded initiative, managed by MEI, providing national support for teachers and students in all state-funded schools and colleges in England.
- It aims to increase participation in AS/A level Mathematics and Further Mathematics, and Core Maths, and improve the teaching of these qualifications.
- Additional support is given to those in priority areas to boost social mobility so that, whatever their gender, background or location, students can choose their best maths pathway post-16, and have access to high quality maths teaching.

Contact the AMSP

01225 716 492

admin@amsp.org.uk

amsp.org.uk

Advanced_Maths