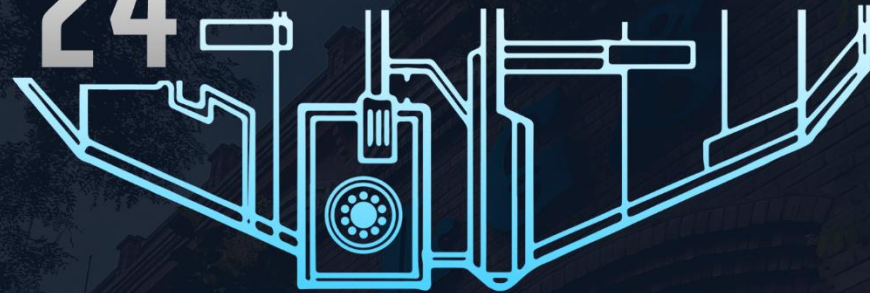




LAHORE GRAMMAR SCHOOL JOHAR TOWN FOR BOYS

# INNOVENTIONS

'24 **INDULGE. INVENT. INNOVATE.**



Infinitesima  
(Study Guide)



11<sup>th</sup>-13<sup>th</sup> OCTOBER



Serving as a battlefield for aspiring mathematicians, this year Infinitesima aims to be highly innovative and test delegates' resilience through tough challenges and obstacles. Incorporating all forms of mathematical thinking such as a broad knowledge of concepts, quick mental calculations and flawless logical reasoning, this category will ensure that only the most well rounded of teams will have the path to glory.

### **Round 1**

To start off the category, teams will battle each other out in a match of Kahoot! Questions will be displayed on the screen, and delegates must choose the correct option on their devices. The more questions solved correctly in a row, the greater the streak of the team which allows them to earn even more points for a correctly solved question. An incorrect option does not carry negative points, but snaps the team's streak. A correct answer given quickly also carries more points. This round will **not** be an elimination round. Calculators are prohibited for this round, and teams must bring their own device.

Delegate Cap: 3

### **Round 2**

Encompassing rapid mental calculations and a test of speed, round 2 contains the Countdown game. Two teams will face each other off in a head to head match, and 6 numbers will be displayed for both teams. Using those 6 numbers, both teams will race each other and achieve a target number using basic arithmetic operations (the bonus round may include surprise operations as well). The target number will typically be a 3 digit number. Teams will have 1 minute to solve each question, and if none of the teams are able to solve the question, it will be skipped. However, points will be awarded if a team approaches close to the target number (depending upon how far off they are from the number). Calculators will not be allowed for this round. May the fastest team win!

Note: Round 2 is an elimination round, and both Round 1 and Round 2 will be considered for teams' qualification to Round 3

Delegate Cap: 2

### **Round 3**

The final round of Infinitesima will be an Olympiad round. There will be 5 problems, out of which teams must choose to solve 3. The problems may belong to the following 4 categories: Number Theory, Combinatorics, Geometry or Algebra. Each question will be worth 7 points, and the points will be awarded from a range of 0-7 depending on the working done or progress made on the question. There will be no negative marking so delegates are encouraged to solve the questions to the best of their abilities. The use of calculators is not allowed for this round as well.

Delegate Cap: 3

Note: To decide the winner and runner ups for Infinitesima, the teams' performance from all the Rounds (1, 2 and 3) will be considered. Hence, the team that attains the highest score in the Olympiad round only may not necessarily be considered the final winner.

Note: Final decisions as well as potential changes are in the hands of category heads.