

RAM Maths Circle

November 16, 2025

Nagpur

Introduction

This session was conducted to introduce students to the concepts of Arithmetic Progression (AP) and Geometric Progression (GP). The session covered the identification of sequences, formation of APs and GPs, and the derivation of their respective sum formulas. To strengthen conceptual understanding, real-life applications—such as the growth of bacteria, spread of rumours, and patterns in salary increments—were used to demonstrate how these progressions operate in practical situations.

Question 1:

There are 20 rows of seats in a concert hall: 25 seats in the 1st row, 27 in the 2nd, 29 in the 3rd, and so on. If the price per ticket is Rs. 28, how much will be the total sales for a one-night concert if all seats are taken?

Question 2:

A person is employed in a company at a salary of Rs. 3000 per month, and he receives an increase of Rs. 100 per year. Find the total amount he receives in 25 years and the monthly salary in the last year.

Question 3:

What will be the 20th term of the AP whose term 6th is 38 and term 10th is 66?

Question 4:

Suppose one person tells 3 new friends about a rumour (stage 1). Each of those 3 people tells 3 new people (stage 2), and so on. How many people have heard the rumour by stage 10?

Question 5:

Suppose a bacterial culture doubles every hour. If an experiment starts with 57 bacteria in a petri dish, how many will there be in 12 hours?

Question 6:

Replace the asterisks in

$$1 * 2 * 3 * 4 * 5 * 6 * 7 * 8$$

with plus or minus signs so that the result is 0.

