Clock and Calendar Numbers in Mathematics

1. Clock Numbers

A clock follows a 12-hour or 24-hour cycle.

The numbers repeat in a circular pattern.

Concept of Modulo 12 (Clock Arithmetic)

If the time is 10:00 and 3 hours pass, the new time is 1:00 (not 13:00).

This follows modulo 12 arithmetic, where numbers reset after 12.

Example:

- 14 hours in a 12-hour format → 14 ÷ 12 = 2 remainder 2 → Time = 2:00

Properties of Clock Numbers

i. Numbers repeat in cycles (1 to 12).

ii. Addition and subtraction wrap around (like 10 + 4 = 2 o'clock).

iii. Used in real life for scheduling and time calculations.

2. Calendar Numbers

A calendar has different number patterns based on days, weeks, months, and years.

There are 7 days in a week and 12 months in a year.

Leap Year Rule

A normal year has 365 days, while a leap year has 366 days.

A leap year occurs if:

- The year is divisible by 4 (Example: 2024 is a leap year).
- Except for century years (divisible by 100), which must also be divisible by 400 (Example: 2000 was a leap year, but 1900 was not).

Example:

- Find the day of the week after 10 days if today is Monday:

➢ Days repeat every 7 days.

➢ 10 ÷ 7 = 1 remainder 3, so the day will be Thursday.

Properties of Calendar Numbers

i. Days repeat in a 7-day cycle.

ii. Months follow a fixed pattern (30 or 31 days, except February).

iii. Leap years add an extra day every 4 years.

iv. Weekdays shift by one day each year (except leap years).