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14. The sum of two numbers is 110. One-fifth of the larger number is 8 more than one-ninth of the smaller number. Find the numbers.

## SECTION D

(4 Marks Each - Case Study)

### Case Study 1: The Triple Remuneration

Three people, A, B, and C, are hired to mow a field. A can mow it in 9 days, B in 12 days, and C in 8 days. They worked together and received ₹1610 for the job.

- Find the ratio of their 1-day work. (2 Marks)
- Calculate the individual share of the money for worker B. (2 Marks)

### Case Study 2: The Two-Motorcyclist Race

The distance between two stations is 300 km. Two motor-cyclists start simultaneously from these stations and move towards each other. The speed of one is 7 km/h faster than the other. After 2 hours, the distance between them is 34 km.

- Let the speed of the slower cyclist be  $x$ . Form a linear equation based on the distance covered in 2 hours. (2 Marks)
- Find the individual speed of each motor-cyclist. (2 Marks)

## VIVA VOCE

(5 Marks)

- **Sets:** What is the cardinality of a set?
- **Direct/Inverse Variation:** If the number of people sharing a fixed amount of food increases, will the food last for more or fewer days? Name the type of variation.
- **Numbers:** What digit should replace  $x$  for  $12x4$  to be divisible by 3?
- **Linear Equations:** How do we remove a denominator from an equation like  $\frac{x}{4} = 5$ ?
- **Time & Work:** If B is 60% more efficient than A, and A takes 12 days, will B take more or less than 12 days?