

- 82. Case Study :** Your elder brother wants to buy a car and plans to take a loan from a bank for his car. He repays his total loan of ₹1,18,000 by paying every month, starting with the first instalment of ₹1,000 and he increases the instalment by ₹100 every month.

Based on the information given above, answer the following questions:

- (i) Find the amount paid by him in the 30th instalment.
- (ii) If the total number of instalments is 40, what is the amount paid in the last instalment?
- (iii) (a) What amount does he still have to pay after the 30th instalment?

OR

- (iii) (b) Find the ratio of the tenth instalment to the last instalment.



83. **Case Study :** In the month of September, villagers of Ankurhut were falling ill with high temperature. Paracetamol was one of the highest sold medicines during that phase. A survey was conducted to estimate the overall sale of Paracetamol of each pharmacy during the last 7 days. It was observed that the number of Paracetamol sold in different shops were all 3-digit numbers, divisible by 13, taken in order.



Based on the information given, answer the above following questions :

- (i) How many Paracetamols were sold by the 7th pharmacy?
- (ii) What was the difference between the number of Paracetamols sold by the 14th and the 9th pharmacy?
- (iii) (a) How many Paracetamols were sold by the 9th pharmacy from the last?

OR

- (iii) (b) What was the total number of Paracetamols sold in that week? (2025C)

84. **Case Study :** A school is organizing a charity run to raise funds for a local hospital. The run is planned as a series of rounds around a track, with each round being 300 metres. To make the event more challenging and engaging, the organizers decide to increase the distance of each subsequent round by 50 metres. For example, the second round will be 350 metres, the third round will be 400 metres and so on. The total number of rounds planned is 10.



Based on the given information answer the following questions :

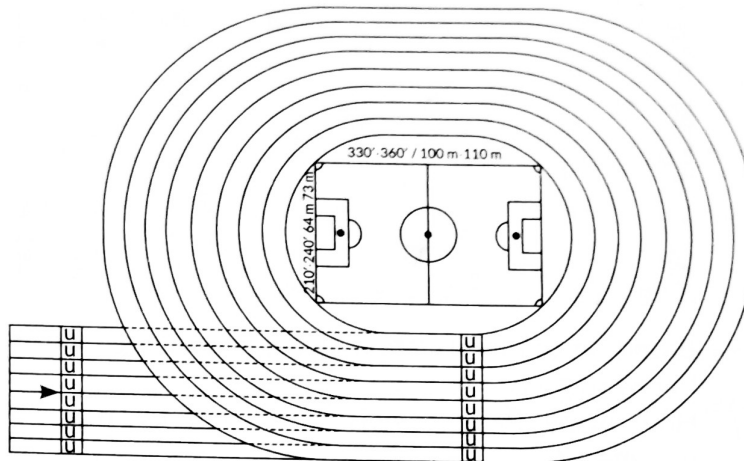
- (i) Write the fourth, fifth and sixth term of the Arithmetic Progression so formed.
- (ii) Determine the distance of the 8th round.
- (iii) (a) Find the total distance run after completing all 10 rounds.

OR

- (iii) (b) If a runner completes only the first 6 rounds, what is the total distance run by the runner?

(2025) CFQ

85. **Case Study :** In order to organise, Annual Sports Day, a school prepared an eight lane running track with an integrated football field inside the track area as shown below:



The length of innermost lane of the track is 400 m and each subsequent lane is 7.6 m longer than the preceding lane.

Based on given information, answer the following questions, using concept of Arithmetic Progression.

- (i) What is the length of the 6th lane?
- (ii) How long is the 8th lane than that of 4th lane?
- (iii) (a) While practicing for a race, a student took one round each in first six lanes. Find the total distance covered by the student.

OR

- (iii) (b) A student took one round each in lane 4 to lane 8. Find the total distance covered by the student.

(2025) R

86. **Case Study :** A school has decided to plant some endangered trees on 51st World Environment Day in the nearest park. They have decided to plant those trees in few concentric circular rows such that each succeeding row has 20 more trees than the previous one. The first circular row has 50 trees.



Based on the above given information, answer the following questions :

- (i) How many trees will be planted in the 10th row ?
- (ii) How many more trees will be planted in the 8th row than in the 5th row ?
- (iii) (a) If 3200 trees are to be planted in the park, then how many rows are required ?

OR

- (iii) (b) If 3200 trees are to be planted in the park, then how many trees are still left to be planted after the 11th row ?

(2024C) CFQ