

FEBRUARY '26 LOGIC Solutions

1. The 5th and the 9th terms in a regular number sequence are 11 and 17 respectively. What is the total sum of the first 20 terms?

Hint: To calculate the sum of the first 20 terms in the sequence, follow these 4 steps:

- 1) Determine the values of the 1st and 20th numbers in the sequence.
- 2) Add the 1st and 20th terms together.
- 3) Divide step 2) by 2, to find the average value of the number sequence.
- 4) Multiply step 3) by the total number of terms in the sequence.

Note: This procedure can be used for any normal sequences of numbers.

Solution: Given: 5th term = **11**, 9th term = **17** and total numbers in sequence = **20**

Step 1): The constant difference between terms = $(17 - 11) / (9 - 5)$ or $6/4 = 1.5$

Therefore, the 1st term number = (5th term) – $(4 \times 1.5) = 11 - 6 = \underline{5}$

and the 20th term = $5 + (19 \times 1.5) = 5 + 28.5 = \underline{33.5}$

Step 2): $5 + 33.5 = \underline{38.5}$

Step 3): $38.5 / 2 = \underline{19.25}$

Step 4): $19.25 \times 20 = \underline{385}$ (total sum of the first 20 terms in sequence)

2. Margaret and Fiona decided to play tennis against each other. They bet £1 on each game they played. Margaret won three bets and Fiona won £5. How many games did they play?

Solution: Eleven, because Fiona lost three games to Margaret, she had lost £3 (£1 per game). So, she had to win back that £3 plus three more games, then win another five games to win £5 for a total of 11 games.

3. Star-sum-logic puzzle: The 11 numbers enclosed within each grouping of outer circles represent the sum of the numbers in their respective surrounding circles. The numbers in the circles can only be 0 to 9 and each number can be used only once. One numbers have been provided to get you started. Find the remaining 9 numbers.

Solution

