Solutions for JUNE '23 LOGIC Challenges

1. If the third term of an arithmetic sequence is 15 and the eighth term is 40, what is the 20th term?

   Solution: 15/3 = 5, 40/8 = 5; therefore, 20 * 5 = 100

2. The average age of 4 children is 15 years. If the ages of their parents are added, the average age is 25. What is the age of the father if he is 4 years older than his wife?

   Solution:
   The average of the ages of the 4 children is 15.and the sum of their ages is 4*15 = 60.

   With the two parent's ages added, the average is now 25, the sum of their ages is now 6*25 = 150.

   So, the sum of the ages of the parents must be 150 – 60 = 90. If the parent's ages were the same age or 90/2 = 45. But since they are not, the father is stated as 4 years older than his wife or 47 while his wife would be 43.

3. Find the numerical equivalent for the following alphameric expressions to satisfy the equations below:

   a) XYZ + XZY = ZYX, Solution: 459 + 495 = 954

   b) EAT + THAT = APPLE, Solution: 419 + 9619 = 10038