Dt: 06.02.2024 | **Learning Reinforcement Program 2023 - 24** | Time: PM 4.20 – 5.00
Test: Maths – 6B | Max Marks: 25 M

Section I: Answer all questions. Each question carries 1 mark. **3 × 1 = 3M**

1. If α and β are the roots of $x^2 + 6x + 5 = 0$ then $\alpha + \beta =$ a) -5 b) 6 c) -6 d) 5 ( )
2. If $x^2 - 2x + 1 = 0$ then $x + \frac{1}{x}$ .....:
3. Write the general form of a quadratic equation.

Section II: Answer all questions. Each question carries 2 marks. **3 × 2 = 6M**

4. Check whether $(x + 2)^3 = x^3 - 4$ is a quadratic equation or not.
5. Find the roots of $x^2 - 2x - 8 = 0$ by factorization.
6. Rohan's mother is 26 years older than him. The product of their ages after 3 years will be 360. Represent this situation in the form of a quadratic equation to find Rohan's present age.

Section III: Answer all questions. Each question carries 4 marks. **2 × 4 = 8M**

7. Find two consecutive positive integers, sum of whose squares is 613.
8. The base of a triangle is 4 cm longer than it's altitude. If the area of the triangle is 48 cm^2 then find it's base and altitude.

Section IV: This question carries 8 marks. There is internal choice for this question. **1 × 8 = 8M**

9. (a) Two trains leave a railway station at the same time. The first train travels towards West and the second train towards North. The first train travels 5 km/h faster than the second train. If after two hours, they are 50 km apart, find the average speed of each train. (OR)
   (b) A motor boat heads upstream a distance of 24 km on a river whose current is running at 3 km/h. The trip up and back takes 6 hours. Assuming that motor boat maintained a constant speed of its own, what was it's speed?

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