CLASS X **SUBJECT: MATHEMATICS**

1. Prove that $\sqrt{3} - 2$ is an irrational number
2. HCF and LCM of two numbers is 9 and 459 respectively. If one of the numbers is 27, find the other number.
3. If α and β are the zeroes of a polynomial such that α + β = -6 and αβ = 5, then find the polynomial0
4. Find the condition that zeroes of polynomial $p(x) = ax^2 + bx + c$ are reciprocal of each other
5. Find the zeroes of the quadratic polynomial $\sqrt{3}\,x^2 - 8x + 4\sqrt{3}$
6. Find the zeroes of the quadratic polynomial $3x^2 - 75$ and verify the relationship between the zeroes and the coefficients.
7. Solve the following pair of linear equations for x and y:
   141x + 93y = 189;
   93x + 141y = 45
8. Solve by elimination:
   3x = y + 5
   5x – y = 11
9. The age of the father is twice the sum of the ages of his 2 children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father
10. Find the value of m so that the quadratic equation mx (x – 7) + 49 = 0 has two equal roots.
11. Solve for x:
    $36x^2 - 12ax + (a^2 - b^2) = 0$
12. Find whether -150 is a term of the A.P. 17, 12, 7, 2, … ?
13. Which term of the progression 20, 192, 183, 17 … is the first negative term?
14. How many terms of the A.P. 27, 24, 21, … should be taken so that their sum is zero?
15. The 9th term of an A.P. is equal to 6 times its second term. If its 5th term is 22, find the A.P.