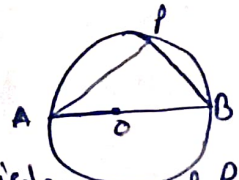


Class-10th

Quadratic Equation

Assignment

1. The Perimeter of a right triangle is 60 cm and its hypotenuse is 25 cm. find the lengths of other two sides of the triangle (cbse-2025)
2. The sum of the area of two square is 52 cm² and diff. of their perimeter is 8 cm. find the length of the side of the two square (cbse-2025)
3. The time taken by a person to travel an upward distance of 150 km was $9\frac{1}{2}$ hours more than the time taken in the downward return Journey. If he returned at a speed of 10 km/h more than the speed while going up, find the speed in each direction (cbse-2025)
4. Express the equation $\frac{x-2}{x-3} + \frac{x-4}{x-5} = \frac{10}{3}$; ($x \neq 3, 5$) as a Quadratic equation in standard form. Hence, find the roots of the equation so formed. (cbse-2025)
5. The value of 'a' for which $ax^2 + x + a = 0$ has equal and positive roots (cbse-2025)
6. A 2-digit number is seven times the sum of its digit and two more than 5 times the product of its digits. find the number (cbse-2025)
7. Find the value of p for which the Quadratic eqn given as $(p+4)x^2 - (p+1)x + 1 = 0$ has real and equal roots. find roots of the eqn. (cbse-2025)
8. There is a circular park of diameter 65 m as shown in the following figure, where AB is a diameter.
An entry gate is to be constructed at a point P on the boundary of the park such that distance of P from A is 35 m more than the distance of P from B. find the distance of point P from A and B respectively (cbse-2025)

9. Find the smallest value of p for which the quadratic equation $x^2 - 2(p+1)x + p^2 = 0$ has real roots. find the roots of eqn. (cbse-2025)

10. A rectangular floor area can be completely tiled with 200 square tiles. If the side length of each tile is increased by 1 unit, it would take only 128 tiles to cover the floor.

(i) Assuming the original length of each side of a tile be x unit. make a quadratic equation from the above information.

(ii) write the corresponding quadratic eqⁿ in standard form.

(iii) (a) find the value of x , the length of side of a tile by factorisation

or

(b) solve the quadratic eqⁿ for x , using quadratic formula. (cbse-2024)

11. In a 2-digit number, the digit at the unit's place is 5 less than the digit at the ten's place. The product of the digit is 36. find the number. (cbse-2024)

12. The quadratic equation $x^2 + x + 1 = 0$ has _____ roots.

13. Find the value of 'c' for which the quadratic eqⁿ (cbse-2024)
 $(c+1)x^2 - 6(c+1)x + 3(c+9) = 0$, $c \neq -1$
has real and equal roots (cbse-2024)

14. A train travels a distance of 90 km at a constant speed. Had the speed been 15 km/h more, it would have taken 30 minutes less for the journey. find the original speed of train. (cbse-2024)

15. The age of man is twice the square of the age of his son. Eight years hence, the age of the man will be 4 years more than three times the age of his son. find their present ages. (cbse-2024)