

D.V.S PUBLIC SCHOOL

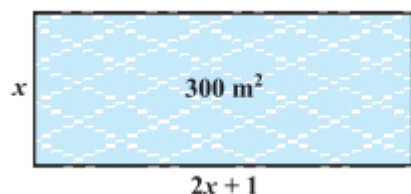
ASSIGNMENT CH-4

Class 10 - Mathematics

Time Allowed: 30 minutes

Maximum Marks: 40

1. John and Jivanti together have 45 marbles. Both of them lost 5 marbles each, and the product of the number of marbles they now have is 124. We would like to find out how many marbles they had to start with. Represent the situation mathematically (quadratic equation). [1]
2. A cottage industry produces a certain number of toys in a day. The cost of production of each toy (in rupees) was found to be 55 minus the number of articles produced in a day. On a particular day, the total cost of production was Rs.750. We would like to find out the number of toys produced on that day. Represent situation mathematically (quadratic equation) [2]
3. Check whether $(x - 2)^2 + 1 = 2x - 3$ is a quadratic equation. [2]
4. Find the roots of the quadratic equation $2x^2 - 5x + 3 = 0$ by factorisation. [3]
5. Find the roots of the quadratic equation $3x^2 - 2\sqrt{6}x + 2 = 0$. [3]
6. Find the dimensions of the prayer hall given in the below figure. [2]



7. A pole has to be erected at a point on the boundary of a circular park of diameter 13 metres in such a way that the difference of its distances from two diametrically opposite fixed gates A and B on the boundary is 7 metres. Is it possible to do so? If yes, at what distances from the two gates should the pole be erected? [2]
8. Find the discriminant of the quadratic equation $3x^2 - 2x + \frac{1}{3} = 0$ and hence find the nature of its roots. Find them, if they are real. [2]
9. Check whether the given equation is quadratic equation or not: $x^3 - 4x^2 - x + 1 = (x - 2)^3$ [2]
10. The area of a rectangular plot is 528 m^2 . The length of the plot (in metres) is one more than twice its breadth. We need to find the length and breadth of the plot. Represent the situation in the form of a quadratic equation. [2]
11. Rohan's mother is 26 years older than him. The product of their ages 3 years from now will be 360. We would like to find Rohan's present age. Represent the situation in the form of a quadratic equation. [3]
12. The product of two consecutive positive integers is 306. Form the quadratic equation to find the integers. Represent the situation in the form of a quadratic equation. [2]
13. Represent the situation in the form of the quadratic equation: [5]
A train travels a distance of 480 km at a uniform speed. If the speed had been 8 km/hr less, then it would have taken 3 hours more to cover the same distance. We need to find the speed of the train.
14. Find the roots of the quadratic equation $2x^2 - x + \frac{1}{8} = 0$ by factorization. [2]
15. Find the roots of the quadratic equation $100x^2 - 20x + 1 = 0$ by factorization. [2]
16. Is it possible to design a rectangular mango grove whose length is twice its breadth and the area is 800 m^2 ? If so, find its length and breadth. [2]

17. Is the following situation possible? If so, determine their present ages. The sum of the ages of two friends is 20 years. Four years ago, the product of their ages in years was 48. **[3]**