
CBSE TEST PAPER-01

MATHEMATICS (Class-10)

Chapter 4 : Quadratic Equations

1. Find the roots of $x - \frac{1}{x} = 3, x \neq 0$ (3 Marks)
2. Find the value of k for $kx^2 + 2x - 1 = 0$, so that it has two equal roots. (3 Marks)
3. Find the value of k for $kx^2 - 2\sqrt{5}x + 4 = 0$, so that it has two equal roots. (3 Marks)
4. If the roots of the equation $(b - c)x^2 + (c - a)x + (a - b) = 0$ are equal, accordingly prove that $2b = a + c$. (3 Marks)
5. Find the discriminant of the quadratic equation $3x^2 - 4\sqrt{3}x + 4 = 0$, and hence find the nature of its roots. (3 Marks)
6. The difference of squares of two numbers is 180. The square of the smaller number is 8 times the larger number. Find the two numbers. (6 Marks)
7. In a class test, the sum of Shefali's marks in Mathematics and English is 30. Had she got 2 marks more in Mathematics and (3 Marks) less in English, the product of their marks would have been 210. Find her marks in the two subjects. (6 Marks)
8. A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream. (6 Marks)
9. 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 differences 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? (6 Marks)