

## CBSE TEST PAPER-02

### MATHEMATICS (Class-10)

#### Chapter 4 : Quadratic Equations

1. Find the roots of  $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$  (3 Marks)
2. Find the value of k for  $2x^2 + kx + 3 = 0$ , so that it has two equal roots. (3 Marks)
3. Find the value of k for  $kx(x - 2) + 6 = 0$ , so that it has two equal roots. (3 Marks)
4. Find the value of k for which the equation  $x^2 + 5kx + 16 = 0$  has no real roots. (3 Marks)
5. Find the discriminant of the quadratic equation  $2x^2 - 6x + 3 = 0$ , and hence find the nature of its roots. (3 Marks)
6. The diagonal of a rectangular field is 60 metres more than the shorter side. If the longer side is 30 metres more than the shorter side, find the sides of the field. (6 Marks)
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 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)
8. Sum of the areas of two squares is  $468 \text{ m}^2$ . If the difference of their perimeters is 24 m, find the sides of the two squares. (6 Marks)
9. An express train takes 1 hour less than a passenger train to travel 132 km between Mysore and Bangalore (without taking into consideration the time they stop at intermediate stations). If the average speed of the express train is 11 km/h more than that of the passenger train, find the average speed of the two trains. (6 Marks)