

CBSE TEST PAPER-03

MATHEMATICS (Class-10)

Chapter 4 : Quadratic Equations

1. Find the roots of $3x^2 - 5x + 2 = 0$ (3 Marks)
2. Find the value of k for $k^2x^2 - 2(2k - 1)x + 4 = 0$, so that it has two equal roots. (3 Marks)
3. Find the value of k for $(k + 1)x^2 - 2(k - 1)x + 1 = 0$, so that it has two equal roots. (3 Marks)
4. Determine the positive value of k for which the equation $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ will both have real roots. (3 Marks)
5. Find the discriminant of the quadratic equation $2x^2 - 3x + 5 = 0$, and hence find the nature of its roots. (3 Marks)
6. Rohan's mother is 26 years older than him. The product of their ages (in years) 3 years from now will be 360. We would like to find Rohan's present age. (6 Marks)
7. 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 11km/h more than that of the passenger train, find the average speed of the two trains. (6 Marks)
8. Two water taps together can fill a tank in $9\frac{3}{8}$ hours. The tap of larger diameter takes 10 hours less than the smaller one to fill the tank separately. Find the time in which each tap can separately fill the tank. (6 Marks)
9. 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)