

1. If the sum of the roots of the equation  $kx^2 - 2\sqrt{2}x + 1 = 0$  is  $\sqrt{2}$ , find the roots of the equation. ( $k=2$ , roots are  $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$ )
2. Find the roots of the equation  $x^2 + x - p(p + 1) = 0$ , where  $p$  is a constant, by factorization method. [ $p, -(p + 1)$ ]
3. Find the value of  $p$  so that the quadratic equation  $px(x - 3) + 9 = 0$  has two equal roots. ( $p = 4$ )
4. A man has Rs. 5700 with him which he wants to divide between his son and a servant. He divides it into two parts whose product is 7820000. He gives the smaller part to his servant. How much does his servant get and what value is depicted by the man? (Rs. 2300 Value: The man shows concern and charity towards people who work for us.)
5. A motor boat whose speed is 20 km/h in still water, takes 1 hour more to go 48 km upstream than to return downstream to the same spot. Find the speed of the stream. (4 km/h)
6. Find the roots of the quadratic equation  $x^2 - 3x - m(m + 3) = 0$ , by factorization method. [ $-m, (m + 3)$ ]
7. Find the value of  $m$  so that the quadratic equation  $mx(x - 7) + 49 = 0$  has two equal roots. ( $m = 4$ )
8. There is 16 litres of water in the house and there are two guests coming to the house. An unknown person knocks at the door and asks for water. The man divides 16 litre of water into two parts such that twice the square of the larger part exceeds the square of the smaller part by 164. He gives the smaller part to the unknown person. How much water is given to the unknown person? By giving water to the unknown person, what value is depicted by the man? (6, Value: By giving water to the unknown person, the man shows cooperation)
9. Some students plan for a picnic. The budget for food was Rs. 480. But 8 of them failed to go, as a result the cost of food for each member increased by Rs. 10. How many students attended the picnic? (16)
10. A train travels 180 km at a uniform speed. If the speed had been 9 km/hour more, it would have taken 1 hour less for the same journey. Find the speed of the train. (36)