PRACTICE QUESTIONS (QUADRATIC EQUATIONS)
CLASS: X : MATHEMATICS

1. If $x = 2$ is a solution of the equation $x^2 - 5x + 6k = 0$, then find the value of k.
2. Find the roots of $2x^2 - 7x + 3 = 0$.
3. If the quadratic equation $x^2 + 4x + k = 0$ has equal roots, then find the value of k.
4. If $x^2 + k(4x + k - 1) + 2 = 0$ has equal roots, then find the value of k.
5. If one root of the equation $ax^2 + bx + c = 0$ is 3 times the other, then find b^2: ac
6. What is the positive real root of $64x^2 - 1 = 0$?
7. For what value of k does $(k - 12)x^2 + 2(k - 12)x + 2 = 0$ have equal roots?
8. Find the value of p so that the quadratic equation $px(x - 3) + 9 = 0$ has equal roots.
9. If $(1 - p)$ is a root of the equation $x^2 + px + 1 - p = 0$, then find the roots.
10. Solve for x: $4x^2 - 2(a^2 + b^2)x + a^2 b^2 = 0$.
11. The sum of the squares of three consecutive positive integers is 50. Find the integers.
12. A train travels 360km at a uniform speed. If the speed had been 5km/hr more, would have taken 1 hour less for the same journey. Find the speed of the train.
13. Two water taps together can fill a tank in $9\frac{3}{8}$ hours. The larger tap 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.
14. A person on tour has Rs.360 for his expenses. If he extends his tour for 4 days, he has to cut down his daily expenses by Rs.3. Find the original duration of the tour.
15. Rs.6500 were divided equally among a certain number of persons. Had there been 15 more persons, each would have got Rs.30 less. Find the original number of persons.
16. 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.
17. In a flight of 600km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr from its usual speed and the time of the flight increased by 30 min. Find the scheduled duration of the flight.
18. In a rectangular park of dimensions 50 m × 40 m, a rectangular pond is constructed so that the area of grass strip of uniform width surrounding the pond would be 1184 m^2. Find the length and breadth of the pond.
19. 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.
20. 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