

1. Find the values of p for which the following equation has two equal roots:
 $(p - 12)x^2 + 2(p - 12)x + 2 = 0$
2. The sum of two natural numbers is 8. Find the numbers if the sum of their reciprocals is $\frac{8}{15}$.
3. The difference of the ages of Sohrab and his father is 30 years. If the difference of the squares of their ages is 1560, find their ages.
4. In a flight of 600 km, an aircraft was slowed down due to bad weather. The average speed for the trip was decreased by 200 km/h and the time of flight increased by 30 minutes. Find the duration of the flight.
5. Rs. 6500 is divided equally among a certain number of persons. Had there been 15 more persons, each would have got Rs. 50 less. Find the original number of persons.
6. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$, find the value of p .
7. The hypotenuse of a right angled triangle is 13 m long. If the base of the triangle is 7 m more than the other side, find the sides of the triangle.
8. Solve for x : $2\left(\frac{2x+3}{x-3}\right) - 25\left(\frac{x-3}{2x+3}\right) = 5$
9. A plane left 30 minutes later than the scheduled time. In order to reach its destination 1500 km away in time, it has to increase the speed by 250 km/h. Find its usual speed.
10. Some students planned a picnic. The budget for food was Rs. 480. But 8 of these students failed to go and the cost of food for each member increased by Rs. 10. How many students attended the picnic?