

1. Solve for x : $2x^2 - 2\sqrt{2}x + 1 = 0$
2. The sum of the ages of a father and his son is 50 years. Five years ago, the product of their ages was 175. Find their present ages.
3. Solve for x : $\frac{1}{x} - \frac{1}{x-2} = 3$; $x \neq 0, 2$
4. The sum of the areas of two squares is 468 m^2 . If the difference of their perimeters is 24 m, find the sides of the two squares.
5. The difference of two numbers is 5 and the difference of their reciprocals is $\frac{1}{10}$. Find the numbers.
6. Solve for x : $abx^2 + (b^2 - ac)x - bc = 0$
7. For what value(s) of k will the quadratic equation $(2k + 1)x^2 + 2(k + 3)x + (k + 5) = 0$ have real and equal roots?
8. Find two consecutive odd positive integers, sum of whose squares is 290.
9. Solve for x : $\frac{1}{x+1} + \frac{1}{x+2} = \frac{4}{x+4}$, $x \neq -1, -2, -4$
10. A journey of 192 km from a town A to town B takes 2 hours more by an ordinary passenger train than a super fast train. If the speed of the faster train is 16 km/h more find the speeds of the faster and the passenger train.