

Class: X
Subject: Mathematics
Topic: Quadratic equations
No. of Questions: 25

- Q1. If $x=2$ and $x=3$ are roots of the equation $3x^2 - 2kx + 2m=0$, find the value of k and m .
- Q2. If one root of the quadratic equation $2x^2 + kx - 6=0$ is 2, find the value of k . Also, find the other root.
(CBSE-2002)
- Q3. Sum of the areas of two squares is 468 m^2 . If the difference of their perimeters is 24m, formulate the quadratic equation to find the sides of the two squares.
- Q4. Factorize and solve the quadratic equation: $x^2 + 2\sqrt{2}x - 6=0$
- Q5. Solve the quadratic equation by factorization method: $x^2 - 8x + 16=0$
- Q6. Solve for x : $\frac{1}{x-2} + \frac{2}{x-1} = \frac{6}{x}$
- Q7. Solve the equation for x : $\frac{4}{x} - 3 = \frac{5}{2x+4}$, $x \neq 0, -3/2$
(CBSE-2006)
- Q8. Solve: $x = \frac{1}{2 - \frac{1}{2 - \frac{1}{2 - x}}}$, $x \neq 2$
- Q9. Solve: $4x^2 - 4ax + (a^2 - b^2) = 0$
(CBSE-2012)
- Q10. Solve the given equation: $x^2 + 3x - (a^2 + a - 2) = 0$
- Q11. Solve: $4x^2 - 2(a^2 + b^2)x + a^2b^2 = 0$
(CBSE-2004)
- Q12. Solve: $9x^2 - 9(a+b)x + (2a^2 + 5ab + 2b^2) = 0$

- Q13. Solve: $a^2b^2x^2 + b^2x - a^2x - 1=0$
- Q14. Solve: $\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}$, $a+b \neq 0$ (CBSE-2005)
- Q15. Solve the equation $2x^2 - 5x + 3=0$ by the method of completing the square.
- Q16. Using quadratic formula, solve $p^2x^2 + (p^2 - q^2)x - q^2=0$, $p \neq 0$ (CBSE-2004)
- Q17. Solve for x: $9x^2 - 9(a+b)x + (2a^2 + 5ab + 2b^2)=0$, using quadratic formula. (CBSE- 2009)
- Q18. Using quadratic formula, solve the following equation for x:
 $bx^2 + (b^2 - ac)x - bc=0$ (CBSE- 2005)
- Q19. Find the value of k in $x^2 - 2x(1+3k) + 7(3+2k)=0$, for which the equation has real and equal roots. (CBSE-2002)
- Q20. Find the values of k for which the following equation has equal roots:
 $(k - 12)x^2 + 2(k - 12)x + 12=0$ (CBSE-2013)
- Q21. Find the values of k for which the equation $x^2 + 5kx + 16=0$ has no real roots.
- Q22. Prove that the equation $x^2(a^2 + b^2) + 2x(ac + bd) + (c^2 + d^2)=0$ has no real root, if $ad \neq bc$.
- Q23. Find the value of k for which the quadratic equation $(k + 4)x^2 + (k + 1)x + 1=0$ has equal roots (CBSE- 2013)
- Q24. If -5 is a root of the quadratic equation $2x^2 + px - 15=0$ and the quadratic equation $p(x^2 + x) + k=0$ has equal roots, find the value of k. (CBSE- 2002)

Q25. The denominator of a fraction is one more than twice the numerator. If the sum of the fraction and its reciprocal is $2\frac{16}{21}$, find the fraction.

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