

5. QUADRATIC EQUATIONS

1. The sum of a number and its reciprocal is $50/7$, then the number is _____
2. The roots of the equation $3x^2 - 2\sqrt{6}x + 2 = 0$ are _____
3. If $x^2 - 2x + 1 = 0$, then $x + 1/x =$ _____
4. If 3 is a solution of $3x^2 + (k-1)x + 9 = 0$, then $k =$ _____
5. The roots of $x^2 - 2x - (r^2 - 1) = 0$ are _____
6. The sum of the roots of the equation $3x^2 - 7x + 11 = 0$ is _____
7. The roots of the equation $\frac{x^2 - 8}{x^2 + 20} = \frac{1}{2}$ are _____
8. The roots of the quadratic equation $\frac{9}{x^2 - 27} = \frac{25}{x^2 - 11}$ are _____
9. The roots of the equation $\sqrt{2x^2 + 9} = 9$ are _____
10. The two roots of a quadratic equation are 2 and -1. The equation is _____
11. If the sum of a quadratic equation $3x^2 + (2k+1)x - (k+5) = 0$, is equal to the product of the roots, then the value of k is _____
12. The value of k for which 3 is a root of the equation $kx^2 - 7x + 3 = 0$ is _____
13. If the difference of the roots of the quadratic equation $x^2 - ax + b$ is 1, then _____
14. The quadratic equation whose one root is $2 - \sqrt{3}$ is _____
15. _____ is the condition that one root of the quadratic equation $ax^2 + bx + c$ is reciprocal of the other.
16. The roots of the quadratic equation $x/p = p/x$ are _____
17. If the roots of the equation $12x^2 + mx + 5 = 0$ are real and equal then m is equal to _____
18. If the equation $x^2 - 4x + a$ has no real roots, then _____

19. The discrimination of the quadratic equation $7\sqrt{3}x^2+10x-\sqrt{3}=0$ is _____
20. The value of $\sqrt{6+\sqrt{6+\sqrt{6+\dots}}}$ is _____
21. Standard form of a quadratic equation is _____
22. The sum of a number and its reciprocal is $5/2$. This is represented as _____
23. “The sum of the squares of two consecutive natural numbers is 25”, is represented as _____
24. If one root of a quadratic equation is $7-\sqrt{3}$ then the other root is _____
25. The discriminant of $5x^2-3x-2 = 0$ is _____
26. The roots of the quadratic equation $x^2-5x+6 = 0$ are _____
27. If $x = 1$ is a common root of the equations $ax^2+ax+3 = 0$ and $x^2+x+b = 0$ then the value of ab is _____
28. If the discriminant of the quadratic equation $ax^2+bx+c = 0$ is zero, then the roots of the equation are _____
29. The product of the roots of the quadratic equation $\sqrt{2}x^2-3x+5\sqrt{2}=0$ is _____
30. The nature of the roots of a quadratic equation $4x^2-12x+9 = 0$ is _____
31. If the equation $x^2-bx+1 = 0$ does not possess real roots, then _____
32. If the sum of the roots of the equation $x^2-(k+6)x+2(2k-1) = 0$ is equal to half of their product, then $k =$ _____
33. If one root of the equation $4x^2-2x+(\lambda-4) = 0$ be the reciprocal of the other, then $\lambda =$ _____
34. If $\sin\alpha$ and $\cos\alpha$ are the roots of the equation $ax^2+bx+c = 0$, then $b^2 =$ _____
35. If the roots of the equation $(a^2+b^2)x^2-2b(a+c)x+(b^2+c^2) = 0$ are equal, then $b^2 =$ _____
36. The quadratic equation whose roots are $-3, -4$ is _____

37. If $b^2 - 4ac < 0$ then the roots of quadratic equation $ax^2 + bx + c = 0$ are

ANSWERS

- 1) $1/7$; 2) $\sqrt{2/3}$, $\sqrt{2/3}$; 3) 2; 4) -11;
5) $1-r$, $r+1$; 6) $7/3$; 7) ± 6 ; 8) ± 6 ; 9) $x = \pm 6$; 10) $x^2 - x - 2 = 0$; 11) 4;
12) 2;
13) $a^2 - 4b = 1$; 14) $x^2 - 4x + 1 = 0$; 15) $a = c$; 16) $\pm p$; 17) $4\sqrt{15}$;
18) $a > 4$; 19) 184;
20) 3; 21) $ax^2 + bx + c = 0$, $a \neq 0$; 22) $(x + 1/x = 5/2)$; 23) $x^2 + (x-1)^2 = 25$;
24) $7 + \sqrt{3}$; 25) 49; 26) 2, 3; 27) 3; 28) real and equal; 29) 5;
30) real and equal; 31) $b^2 - 4 < 0$ (or) $b^2 < 4$ (or) $-2 < b < 2$; 32) 7; 33) 8;
34) $a^2 + 2ac$; 35) ac ; 36) $x^2 + 7x + 12 = 0$;
37) Not real or imaginary.