Short Questions

Write Short answers of the following questions:

Solve the following quadratic equations by factorization

Q.1 $x^2 + 7x + 12 = 0$

Q2. $x^2 - x = 2$

Q3. $x(x + 7) = (2x - 1)(x + 4)$

Q4. $6x^2 - 5x = 4$

Q5. $3x^2 + 5x = 2$

Q6. $2x^2 + x = 1$

Q7. $m x^2 + (1 + m)x + 1 = 0$

Solve the following equations by completing the square:

Q8. $x^2 - 2x - 899 = 0$

Q9. $2x^2 + 12x - 110 = 0$

Q10. $x^2 + 5x - 6 = 0$

Q11. $x^2 - 6x + 8 = 0$

Solve the following equations by quadratic formula :

Q12. $4x^2 + 7x - 1 = 0$

Q13. $9x^2 - x - 8 = 0$

Q14. $X^2 - 3x - 18 = 0$

Q15. $X^2 - 3x = 2x - 6$

Q16. $3x^2 - 5x - 2 = 0$

Q17. $16x^2 + 8x + 1 = 0$

Q18   Define discriminant

Discuss the nature of the roots of the equation:

Q19 $2x^2 - 7x + 3 = 0$

Q20. $x^2 - 5x - 2 = 0$

Q21. $x^2 + x + 1 = 0$

Q22. $x^2 - 2\sqrt{2}\,x + 2 = 0$

Q23. $9x^2 + 6x + 1 = 0$

Q24. $3x^2 - 13x + 9 = 0$

For what value of K the roots of the following equations are equal:

Q25 $Kx^2 + 4x + 3 = 0$

Q26. $2x^2 + 5x + K = 0$

Q27   Prove that the roots of the equation

         $(a + b)x^2 - ax - b = 0$ are rational

Q28   Write relation between the roots and the coefficients of the quadratic equation

         $ax^2 + bx + c = 0$

Q.29   If the sum of the roots of $4x^2 + kx - 7 = 0$ is 3, Find the value of k.

Q.30   Find the value of K if the sum of the roots of equation

         $(2k - 1)x^2 + (4k - 1)x + (K + 3) = 0$ is 5/2

Find the sum and product of the roots of following equations:

Q31 $7x^2 - 5x + 4 = 0$

Q32. $x^2 - 9 = 0$

Q33. $9x^2 + 6x + 1 = 0$

Q34.   For what value of k the sum of roots of equation $3x^2 + kx + 5 = 0$

         may be equal to the product of roots?

Q35.   If α, β are the roots of $x^2 - px - p - c = 0$ then prove that $(1 + \alpha)(1 + \beta) = 1 - c$

Write the quadratic equation for the following equations whose roots are :

Q.36   -2, -3

Q37. $i\sqrt{3}$, $-i\sqrt{3}$

Q38. $-2+\sqrt{3}$, $-2-\sqrt{3}$

Q.39 Form the quadratic equation whose roots are equal numerically but opposite in

sign to those of $3x^2-7x-6=0$

If α, β are the roots of the equation $x^2-4x+2=0$ find equation whose roots are:

Q40. $\dfrac{1}{\alpha}$, $\dfrac{1}{\beta}$

Q41 $-\alpha$, $-\beta$

Answers

Q1.   {- 3 , - 4}   Q2 {- 1 , 2}   Q3 { 2 , -2}   Q4   {4/3 , - ½} Q5 {1 , -6}

Q6   {-1 , ½}   Q7 {-1 , - 1/m}   Q8 {-29 , 31}   Q9 {-11 , 5}   Q10 {1 , – 6}

Q11   {2 , 4}   Q12. {1 , -6}   Q13 {$\dfrac{-7-\sqrt{65}}{8}$, $\dfrac{-7+\sqrt{65}}{8}$}   Q14 {-8/9 , 1}

Q15   {6 , -3}   Q16 {2 , 3}   Q17 {2 , -1/3}   Q18 {-1/4 }

Q19.   Roots are rational , real and unequal Q20   Roots are irrational , real and unequal

Q21 Roots are imaginary   Q22   Roots are equal and real

Q23 Roots are equal and real   Q24   Roots are unequal , real and irrational

Q25. K = 4/3   Q26. K = 5   Q29 K = -12   Q30. K = 7/18

Q31   S = 5/7 , P = 4/7   Q32 S = 0 , P = - 9   Q33   S = -2/3 , 1/9

Q34   K = - 5   Q36 $x^2+5x+6=0$ Q37 $x^2+3=0$ Q38 $x^2+4x+1=0$

Q39 $3x^2+7x-2=0$ Q40 $2x^2-4x+1=0$ Q41 $x^2+4x+2=0$