

## Holiday Homework (2022 – 23)

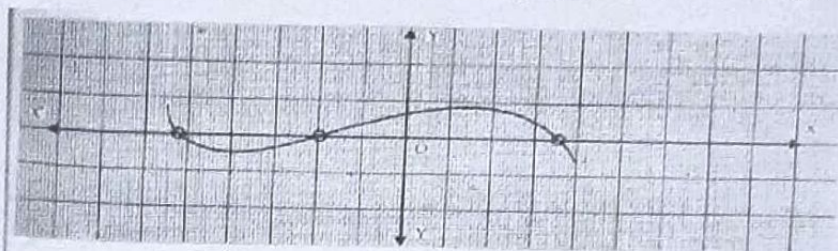
Class – X

Subject – Maths

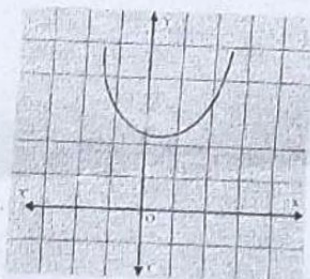
- Q1. Has the rational number  $\frac{441}{2^2 \cdot 5^7 \cdot 7^2}$  a terminating or a non-terminating decimal representation?
- Q2. Prove that  $15 + 17\sqrt{3}$  is an irrational number.
- Q3. (i) Find the LCM and HCF of 120 and 144 by using Fundamental Theorem of Arithmetic.  
(ii)  $\frac{241}{4000} = \frac{241}{2^m 5^n}$ , find the values of m and n where m and n are non-negative integers.  
Hence write its decimal expansion without actual division.
- Q4. Prove that  $\sqrt{3}$  is irrational.
- Q5. Express the number  $0.\overline{3178}$  in the form of rational number  $\frac{a}{b}$ .
- Q6. The LCM of 2 numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number.
- Q7. The decimal expansion of  $\pi$  is:  
(a) terminating  
(b) non-terminating and non-recurring  
(c) non-terminating and recurring  
(d) doesn't exist
- Q8. Which of the following rational numbers have a terminating decimal expansion?  
(a)  $\frac{125}{441}$   
(b)  $\frac{77}{210}$   
(c)  $\frac{15}{1600}$   
(d)  $\frac{129}{2^2 \times 5^2 \times 7^2}$
- Q9. If the HCF of 55 and 99 is expressible in the form  $55m + 99$ , then the value of m is:  
(a) 4  
(b) 2  
(c) 1  
(d) 3
- Q10. Given that  $\text{LCM}(91, 26) = 182$ , then  $\text{HCF}(91, 26)$  is:  
(a) 13  
(b) 26  
(c) 7  
(d) 9
- Q11. If the sum of zeroes of the quadratic polynomial  $3x^2 - kx + 6$  is 3, then find the value of k.
- Q12. If  $\alpha$  and  $\beta$  are the zeroes of the polynomial  $ax^2 + bx + c$ , find the value of  $\alpha^2 + \beta^2$ .
- Q13. If the sum of the zeroes of the polynomial  $p(x) = (k^2 - 14)x^2 - 2x - 12$  is 1, then find the value of k.
- Q14. If  $\alpha$  and  $\beta$  are the zeroes of a polynomial such that  $\alpha + \beta = -6$  and  $\alpha\beta = 5$ , then Find the condition that zeroes of polynomial



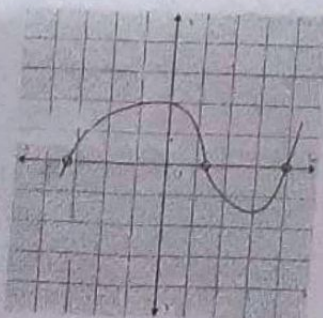
- Q15. For what value of  $k$ ,  $(-4)$  is a zero of the polynomial  $x^2 - x - (2k + 2)$ ?
- Q16. For what value of  $p$ ,  $(-4)$  is a zero of the polynomial  $x^2 - 2x - (7p + 3)$ ?
- Q17. If  $1$  is a zero of the polynomial  $p(x) = ax^2 - 3(a - 1)x - 1$ , then find the value of  $a$ .
- Q18. If  $(x + a)$  is a factor of  $2x^2 + 2ax + 5x + 10$  find  $a$ .
- Q19. Write the zeroes of the polynomial  $x^2 + 2x + 1$ .
- Q20. Write the zeroes of the polynomial  $x^2 - x - 6$ .
- Q21. Write a quadratic polynomial, the sum and product of whose zeroes are  $3$  and  $-2$  respectively.
- Q22. Write the number of zeroes of the polynomial  $y = f(x)$  whose graph is given in the figure.



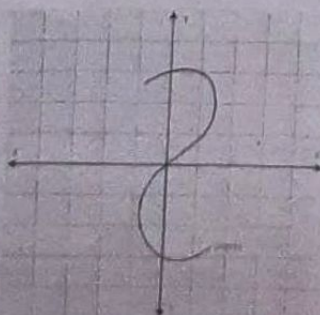
- Q23. The graph of  $y = f(x)$  is given in figure. How many zeroes are there of  $f(x)$ ?



- Q24. The graph of  $y = f(x)$  is given in the figure. What is the number of zeroes of  $f(x)$ ?



- Q25. What is the number of zeroes of the polynomial  $y = p(x)$ ?





- Q26. Find the zeroes of the quadratic polynomial  $6x^2 - 3 - 7x$  and verify the relationship between the zeroes and the coefficient of the polynomial.
- Q27. Find the zeroes of the quadratic polynomial  $5x^2 - 4 - 8x$  and verify the relationship between the zeroes and the coefficient of the polynomial.
- Q28. Find the quadratic polynomial, the sum of whose zeroes is 8 and their product is 12. Hence, find the zeroes of the polynomial.
- Q29. If one zero of the polynomial  $(a^2 - 9)x^2 + 13x + 6a$  is reciprocal of the other, find the value of 'a'.
- Q30. If the lines given by  $3x + 2ky = 2$  and  $2x + 5y + 1 = 0$  are parallel, then find value of k.
- Q31. Find the value of c for which the pair of equations  $cx - y = 2$  and  $6x - 2y = 3$  will have infinitely many solutions.
- Q32. Do the equations  $4x + 3y - 1 = 5$  and  $12x + 9y = 15$  represent a pair of coincident lines?
- Q33. Find the co-ordinate where the line  $x - y = 8$  will intersect y-axis.
- Q34. Write the number of solutions of the following pair of linear equations:  
 $x + 2y - 8 = 0$ ,  $2x + 4y = 16$
- Q35. Is the following pair of linear equations consistent? Justify your answer.  
 $2ax + by = a$ ,  $4ax + 2by - 2a = 0$ ;  $a, b \neq 0$
- Q36. For all real values of c, the pair of equations  
 $x - 2y = 8$ ,  $5x + 10y = c$  have a unique solution. Justify whether it is true or false.
- Q37. Does the following pair of equations represent a pair of coincident lines? Justify your answer.  
 $2x + y + 25 = 0$ ,  $4x + 8y + 516 = 0$ .
- Q38. If  $x = a$ ,  $y = b$  is the solution of the pair of equation  $x - y = 2$  and  $x + y = 4$ , then find the value of a and
- Q39. Solve:  $5x - 4y + 8 = 0$   
 $7x + 6y - 9 = 0$
- Q40. Solve the equation:  $x + y = 14$ ,  $2x + 2y = 28$ .

**\*\*Activity 1:** To find HCF of two nos. experimentally.

**\*\*Activity 2:** To find zeros of a Polynomial by the graphical method.

**\*\*Activity 3:** Working model of types of polynomials.