

HOLIDAYS HOME WORK (2022-23)

CLASS-X. SUB: MATHS

- Q1. Prove that $\sqrt{3}$ is an irrational number.
- Q2. Show that $2-\sqrt{5}$ is an irrational number.
- Q3. Show that any positive odd integer is of the form $4q+1$ or $4q+3$, where q is some integer.
- Q4. Use Euclid's division algorithm to find the HCF of 4052 and 12576
- Q5. Find the zeroes of the quadratic Polynomial $f(x)=6x^2-3$, and verify the relationship between the zeroes and its coefficients.
- Q6. If α and β are the zeroes of $f(x)=ax^2+bx+c$, then evaluate : (i) $\alpha^2+\beta^2$ (ii) $\frac{\alpha^2}{\beta}+\frac{\beta^2}{\alpha}$
- Q7. If α, β are the zeroes of $p(x)=2x^2+5x+k$ satisfying the relation $\alpha^2+\beta^2+\alpha.\beta=\frac{21}{4}$, then find the value of k for this to be possible.
- Q8. If two zeroes of the polynomial $f(x)=x^4-6x^3-26x^2+138x-35$ are $2+\sqrt{3}$ and $2-\sqrt{3}$, find other zeroes.
- Q9. Solve graphically the system of equations: $x+y=3$
 $3x-2y=4$
- Q10. solve the following system of equations by using the method of substitution
- $$x+2y=-1$$
- $$2x-3y=12$$
- Q11. Determine the values of m and n so that the following system of equations have infinite number of solutions
- $$(2m-1)x+3y-5=0$$
- $$3x+(n-1)y-2=0$$
- Q12. Determine the value of k so that the following linear equations have no solution.
- $$(3k+1)x+3y-2=0$$
- $$(k^2+1)x+(k+2)y-5=0$$

- Q13. If the sum of a numerator and denominator of a fraction is 18. If the denominator is increased by 2, the fraction reduces to $\frac{1}{3}$. Find the fraction.
- Q14. ABCD is a cyclic quadrilateral such that $\angle A = (4y+20)^\circ$, $\angle B = (3y-5)^\circ$, $\angle C = (4x)^\circ$ and $\angle D = (7x+5)^\circ$, find the four angles.
- Q15. A railway half ticket costs half the full fare and the reservation charge is same on half ticket as on full ticket. One reserved first class ticket from Mumbai to Ahmedabad costs ₹ 216 and one full and one half reserved first class ticket costs ₹ 327. What is the basic first class full fare and what is the reservation charge?
- Q16. The students of a class are made to stand in rows. If 3 students are extra in a row, there would be 1 row less. If 3 students are less in a row there would be 2 rows more. Find the number of students in the class.
- Q17. Prove that if a line is drawn parallel to one side of a triangle intersecting the other two sides, then it divides the two sides in the same ratio.
- Q18. In triangle ABC, P and Q are points on sides AB and AC respectively, such that PQ \parallel BC. If AP = 2.4 cm, AQ = 2 cm, QC = 3 cm and BC = 6 cm. Find AB and PQ.

Activity: Write the all formulae and all mathematical concepts of Unit 1 (Real number) and Unit 2 (Polynomials) on the chart-paper.