

MATHS:-

- 1) Do the given assignments.
- 2) Make a project on
Pascal's triangle (Roll no 1 – 30)
Fibonacci number (Roll no 31 – 59)

ENGLISH:-

1. Prepare a project based on the novel "Gulliver's Travel" by Jonathan Swift. Heading to be included.
 - a) Introduction of the novel
 - b) Acknowledgment
 - c) Brief Summary
 - d) Character Sketches
 - e) Theme/Significance of the novel
2. Design a beautiful collage based on any one of the following authors:
 - Sudha Murthy
 - William D Ellis
 - Alexander Baron
 - P.G. Wodehouse
 - O. Henry
3. Work Book Lesson 1 & 2

SCIENCE:- i) Complete the following lab practical in LAB RECORD REGISTER

- a) To study the life cycle of mosquito
- b) To study the temporary slide of onion

ii) Complete the worksheet of CH-8 (The fundamental unit of life) in H.W register.

iii) Revise Pre-mid term syllabus.

SOCIAL SCIENCE:- A → Work on the following Projects [Do any two]

1. Find five industries getting raw material from the forest and wildlife and make a project by explaining their production process. [in scrap file]
2. Collect pictures and reports from newspapers and magazines and make a project on –how the use of chemical fertilizers can be harmful.
3. Make a project on communication techniques during disaster [in scrap file]

B → Learn all the chapters done in class.

HINDI:- (i) बचपन से पूरे होते बच्चे पर एक प्रोजेक्ट तैयार कीजिए।

(ii) यदि आपकी भेट ईश्वर से हो जाए तो आप अपने लिए उनसे क्या माँगेगे? इसे अपने व भगवान के मध्य संवाद रूप में लिखिए।

(iii) आप जीवन में किसे अपना आदर्श मानते हैं? अपने आदर्श का चित्र चिपकाएँ उनसे कौन से गुणों को आप अपनाना चाहते हैं और क्यों?

(iv) पाँच प्रसिद्ध 'स्लोगन' चित्र सहित लिखिए।

(v) स्पर्धा, संचयन में करवाया गया कार्य याद करें।

(vi) व्याकरण में करवाए गए कार्य का अभ्यास करें।

DRAWING:- Folk art painting on canvas. (Size 16"x14")

CLASS-IX

ASSIGNMENT-COORDINATE GEOMETRY

- Q1. Abscissa of all the points on the x-axis is : A) 0 B) 1 C) 2 D) any number.
- Q2. Ordinate of all the points on the x-axis is : A) 0 B) 1 C) -1 D) any number.
- Q3. A point both of whose coordinates are negative will lie in : A) I quadrant B) II quadrant C) III quadrant D) IV quadrant .
- Q4. Points (1,-1) , (2,-2) , (4,-5) , (-3,-4) will lie in : A) II quadrant B) III quadrant C) IV quadrant D) do not lie in the same quadrant.
- Q5. If y-coordinate of a point is zero, then this point always lies in : A) I quadrant B) II quadrant C) on x- axis D) on y-axis
- Q6. The points (-5,2) , (2,-5) lie in the : A) same quadrant B) II and III quadrant, respectively. C) II and IV quadrants, respectively D) IV and II quadrants, respectively .
- Q7. If the perpendicular distance of a point P from the x-axis is 5 units and the foot of the perpendicular lies on the negative direction of x-axis, then the point P has A) x coordinate = -5 units B) y coordinate = 5 only C) y coordinate = -5 only D) y coordinate = 5 or -5 .
- Q8. On plotting the points O(0,0),A(3,0),B(3,4),C(0,4) and joining OA,AB,BC and CO which of the following figure is obtained : A) square B) rectangle C) trapezium D) rhombus .
- Q9. If P(-1,1),Q(3,-4),R(1,-1),S(-2,-3) and T(-4,4) are plotted on the graph paper, then the point(s) in the fourth quadrant are : A) P and T B) Q and R C) Only S D) P and R .
- Q10. If the coordinates of the two points are P(-2,3) and Q(-3,5) , then (abscissa of P)-(abscissa of Q) is A) -5 B) 1 C) -1 D) -2 .
- Q11. Abscissa of a point is positive in : A) I and II quadrants B) I and IV quadrant C) I quadrant only D) II quadrant only .
- Q12. The points whose abscissa and ordinate have different signs will lie in : A) I and II quadrants B) II and III quadrants C) I and III quadrants D) II and IV quadrants .
- Q13. The perpendicular distance of the point P(3,4) from the y-axis is : A) 3 B) 4 C) 5 D) 7
- Q14. Write whether the following statements are true or false ? Justify your answer.
A) Point(0,-2) lies on they-axis B) The perpendicular distance of the point (4,3) from the x-axis is 4.
- Q15. A point lies on the y-axis at a distance of 2 units from the x-axis. Its coordinates are (2,0). Is this statement true or false ?justify your answer.
- Q16. Plot the following points and write the name of the figure obtained by joining them in order.P(-3,2),Q(-7,-3),R(6,-3),S(2,2) .
- Q17. Plot the following points and check whether they are collinear or not : A) (1,3),(-1,-1),(-2,-3) B) (1,1),(2,-3),(-1,-2). C) (0,0),(2,2),(5,5) .
- Q18. Plot the following points by using the scale 1cm= 0.25 units : P(1.25,-0.5), Q(0.25,1),R(1.5,1.5) , S(-1.75,-0.25) .
- Q19. Find the coordinates of the point : A) which lies on x-axis and y-axis both B) whose ordinate is -4 and which lies on y-axis. C) whose abscissa is 5 and which lies on x-axis.

Q20. Three vertices of a rectangle are $(3,2)$, $(-4,2)$, $(-4,5)$. Plot these points and find the coordinates of the fourth vertex.

Q21. Points $A(5,3)$, $B(-2,3)$ and $D(5,-4)$ are the three vertices of a square ABCD. Plot these points on a graph paper and hence find the coordinates of the vertex C.

Q22. Write the coordinates of the vertices of a rectangle whose length and breadth are 5 units and 3 units respectively, one vertex at the origin, the longer side lies on the x-axis and one of the vertices lies in the third quadrant.

Q23. Plot the points $P(1,0)$, $Q(4,0)$ and $S(1,3)$. Find the coordinates of the point R such that PQRS is a square.

Q24. Plot the points $A(1,-1)$ and $B(4,5)$: A) Draw a line segment joining these points. Write the coordinates of a point on this line segment between the points A and B. B) Extend this line segment and write the coordinate of a point on this line which lies outside the line segment AB.

CLASS - IX

ASSIGNMENT-NUMBER SYSTEM

Q1. Which of the following is not equal to $\left[\left(\frac{5}{6}\right)^{\frac{1}{5}}\right]^{\frac{-1}{6}}$?

- A) $\left(\frac{5}{6}\right)^{\frac{1}{5}-\frac{1}{6}}$ B) $\frac{1}{\left[\left(\frac{5}{6}\right)^{\frac{1}{5}}\right]^{\frac{1}{6}}}$ C) $\left(\frac{6}{5}\right)^{\frac{1}{30}}$ D) $\left(\frac{5}{6}\right)^{-\frac{1}{30}}$

Q2. The decimal expansion of the number $\sqrt{2}$ is A) a finite number B) 1.41421 C) non-terminating recurring D) non-terminating non recurring

Q3. A rational number between $\sqrt{2}$ and $\sqrt{3}$ is A) $\frac{\sqrt{2}+\sqrt{3}}{2}$ B) $\frac{\sqrt{2}\sqrt{3}}{2}$ C) 1.5 D) 1.8

Q4. The value of $1.\bar{9}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$, is A) $\frac{19}{10}$ B) $\frac{1999}{1000}$ C) 2 D) $\frac{1}{9}$.

Q5. Rationalise the denominator of $\frac{1}{\sqrt{9}-\sqrt{8}}$.

Q6. After rationalising the denominator of $\frac{7}{3\sqrt{3}-2\sqrt{2}}$, what denominator we will get ?

Q7. What is the value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$?

Q8. If $\sqrt{2} = 1.4142$, then $\sqrt{\frac{\sqrt{2}-1}{\sqrt{2}+1}}$ is equal to A) 2.4142 B) 5.8282 C) 0.4142 D) 0.1718

Q9. $\sqrt[4]{3\sqrt{2}}$ equals A) $2^{-\frac{1}{6}}$ B) 2^{-6} C) $2^{\frac{1}{6}}$ D) 2^6

Q10. The product $\sqrt[3]{2} \cdot \sqrt[4]{2} \cdot \sqrt[12]{32}$ equals A) $\sqrt{2}$ B) 2 C) $\sqrt[12]{2}$ D) $\sqrt[12]{32}$

Q11. Value of $\sqrt[4]{(81)^{-2}}$ is A) $\frac{1}{9}$ B) $\frac{1}{3}$ C) 9 D) $\frac{1}{81}$.

Q12. Which of the following is equal to x ? A) $x^{\frac{12}{7}} - x^{\frac{5}{7}}$ B) $\sqrt[12]{(x^4)^{\frac{1}{3}}}$ C) $(\sqrt{x^3})^{\frac{2}{3}}$ D) $x^{\frac{12}{7}} \times x^{\frac{7}{12}}$.

Q13. State whether the following statements are true or false ? Justify your answer. A) $\frac{\sqrt{2}}{3}$ is a rational number. B) There are infinitely many integers between any two integers. C) Number of rational numbers between 15 and 18 is finite. D) There are numbers which cannot be written in the form $\frac{p}{q}$, $q \neq 0$, p, q are both integers. E) The square of an irrational number is always rational. F) $\frac{\sqrt{12}}{\sqrt{3}}$ is not a rational number as 12 and 3 are not integers. G) $\frac{\sqrt{15}}{\sqrt{3}}$ is written in the form $\frac{p}{q}$, $q \neq 0$ and so it is a rational number.

Q14. Let x and y be rational and irrational numbers, respectively. Is x+y necessarily an irrational number. Give an example in support of your answer.

Q15. Let x be rational and be irrational. Is xy necessarily irrational ? Justify your answer by an example. Type equation here.

Q16. For which of the variables x, y, z and u represent rational numbers and which irrational numbers : A) $x^2=5$ B) $y^2=9$ C) $z^2=0.04$ D) $u^2=\frac{17}{4}$.

Q17. Find three rational numbers between : A) -1 and -2 B) 0.1 and 0.11 C) $\frac{5}{7}$ and $\frac{6}{7}$ D) $\frac{1}{4}$ and $\frac{1}{5}$.

Q18. Insert a rational number and an irrational number between the following : A) 2 and 3 B) 0 and 0.1 C) $\frac{1}{3}$ and $\frac{1}{2}$ D) $\frac{-2}{5}$ and $\frac{1}{2}$ E) 0.15 and 0.16 F) $\sqrt{2}$ and $\sqrt{3}$ G) 2.357 and 3.121 H) 0.0001 and 0.001 I) 3.623623 and 0.484848 J) 6.375289 and 6.375738.

Q19. Locate $\sqrt{5}, \sqrt{10}, \sqrt{13}, \sqrt{17}$ and $\sqrt{20}$ on the number line.

Q20. Express the following in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$: A) 0.2 B) 0.888... C) $5.\overline{2}$ D) $0.\overline{001}$ E) $0.2\overline{5}$ and F) $0.\overline{134}$ and G) $0.00\overline{32}$.

Q20. Find the values of a and b in each of the following : A) $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a - 6\sqrt{3}$ B) $\frac{3-\sqrt{5}}{3+2\sqrt{5}} = a\sqrt{5} - \frac{19}{11}$ C) $\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = 2 - b\sqrt{6}$ D) $\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = a + \frac{7}{11}\sqrt{5}b$

Q21. If $a = 2 + \sqrt{5}$, then find the value of $a - \frac{1}{a}$. Also simplify : $\left[\left((625)^{-\frac{1}{2}} \right)^{-\frac{1}{4}} \right]^2$.

Q22. Express $0.6 + 0.\overline{7} + 0.4\overline{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

Q23. Simplify : $\frac{7\sqrt{3}}{\sqrt{10}+\sqrt{3}} - \frac{2\sqrt{5}}{\sqrt{6}+\sqrt{5}} - \frac{3\sqrt{2}}{\sqrt{15}+3\sqrt{2}}$.

Q24. $\sqrt{2} = 1.414, \sqrt{3} = 1.732$, then find the value of $\frac{4}{3\sqrt{3}-2\sqrt{2}} + \frac{3}{3\sqrt{3}+2\sqrt{2}}$.

Q25. If $a = \frac{3+\sqrt{5}}{2}$, then find the value of $a^2 + \frac{1}{a^2}$.

Q26. If $x = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ and $y = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$, then find the value of $x^2 + y^2$.

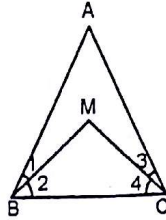
Q27. Simplify : $(256)^{-\left(4^{-\frac{3}{2}}\right)}$.

Q28. Find the value of : $\frac{4}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{2}{(243)^{-\frac{1}{5}}}$.

3

INTRODUCTION TO EUCLID'S GEOMETRY

- Q1. In the adjoining figure, if $\angle 1 = \angle 2$, $\angle 3 = \angle 4$ and $\angle 2 = \angle 4$, then find the relation between $\angle 1$ and $\angle 3$, using an Euclid's axiom.



- Q2. Seeta and Geeta have same weight of rice. If each of them loses by 5 kg of rice how will the new weights of their rice be related? Use any Euclid's axiom.

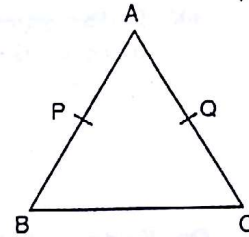
- Q3. In the adjoining figure, you are given $AB = CD$. Prove that $AC = BD$.



Value Based Question

- Q4. As shown in the figure, three cities A, B and C are located in border area. AB, BC and AC are three roads which join to one another. To protect these cities from enemy countries The Government of India decided to build two air bases P and Q in such a way that P and Q be mid-points of the roads, AB and AC.

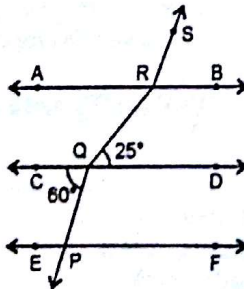
- (i) If $AB = AC$, prove that $AP = AQ$.
(ii) What values are shown by the government?



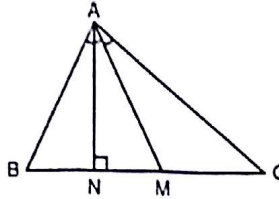
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LINES AND ANGLES

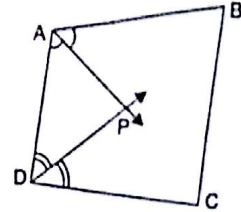
- Q1. In figure, if $AB \parallel CD \parallel EF$, $PQ \parallel RS$, $\angle RQD = 25^\circ$ and $\angle CQP = 60^\circ$, then find $\angle QRS$.



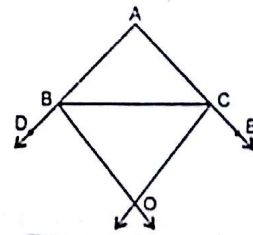
- Q2. In $\triangle ABC$ (see adjoining figure), $\angle B > \angle C$, if AM is the bisector of $\angle BAC$ and $AN \perp BC$, prove that $\angle MAN = \frac{1}{2}(\angle B - \angle C)$.



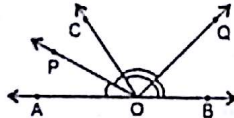
- Q3. In the given figure, AP and DP are the bisectors of two adjacent angles $\angle A$ and $\angle D$ of a quadrilateral $ABCD$. Prove that $2\angle APD = \angle B + \angle C$.



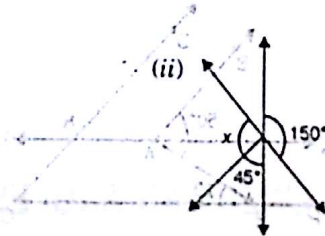
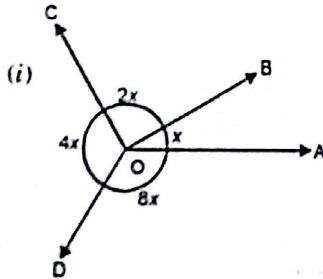
- Q4. In adjoining figure, the sides AB and AC of a triangle ABC are produced to D and E respectively. The bisectors of two exterior angles B and C intersect each other at a point O . Prove that $\angle BOC = 90^\circ - \frac{1}{2}\angle A$.



- Q5. In the adjoining figure, if AOB is a straight line, OP bisects $\angle AOC$ and OQ bisects $\angle BOC$, show that $\angle POQ$ is a right angle.



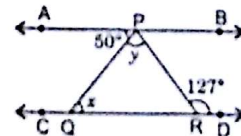
- Q6. Find x in degrees.



Value Based Questions

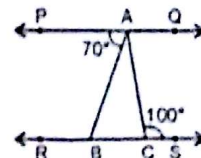
- Q7. A farmer has a triangular field and a cow suffering from disease. He tied the cow at point R , other animals in the enclosures with angles x and y , shown in figure.

- (i) If $AB \parallel CD$, $\angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$, find x and y .
(ii) Write the values shown by the farmer.



- Q8. A teacher gave her students old newspapers and asked them to make triangles from it using paper folding with the given specifications. In the figure, $PQ \parallel RS$, $\angle PAB = 70^\circ$, $\angle ACS = 100^\circ$.

- (i) Determine $\angle ABC$, $\angle BAC$ and $\angle CAQ$.
(ii) What values have the teacher been trying to develop them in her students?



Holidays Home Work

CLASS-IX

ASSIGNMENT-POLYNOMIALS

Q1. Find the zeroes of the polynomial $2x^2 - 7x$.

Q2 Show that $(p - 1)$ is a factor of $p^{10} + p^8 + p^6 - p^4 - p^2 - 1$.

Q3. If a, b, c are all non-zero and $a + b + c = 0$, prove that : $\frac{a^2}{bc} + \frac{b^2}{ac} + \frac{c^2}{ab} = 3$.

Q4. Expand $\left(\frac{-x}{2} + y + \frac{1}{4}\right)^2$.

Q5. Factorise : $x^3 + 6x^2 + 11x + 6$.

Q6. Using a suitable identity, factorise : $p^3(q - r)^3 + q^3(r - p)^3 + r^3(p - q)^3$.

Q7. Find the product. Using suitable identity : $\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right)$.

Q8. Factorise : $a^{12} + b^{12}$.

Q9. If $x + y + z = 1$, $xy + yz + zx = -1$ and $xyz = -1$, find the value of $x^3 + y^3 + z^3$.

Q10. Find the value of a if $x - a$ is a factor of $x^3 - a^2x + x + 2$.

Q11. Find the product : $(x + y + 2z)(x^2 + y^2 + 4z^2 - xy - 2yz - 2zx)$

Q12. Find the value of $27x^3 + 8y^3$, if $3x + 2y = 20$ and $xy = \frac{11}{9}$.

Q13. Factorise : $\sqrt{7}x^2 + 9x + 2\sqrt{7}$.

Q14. using factor theorem, factorise : $x^3 - 2x^2 - 5x + 6$.

Q15. If $x + y + z = 0$, prove $x^3 + y^3 + z^3 = 3xyz$, Hence factorise $(p - q)^3 + (q - r)^3 + (r - p)^3$ and also calculate the value of $13^3 + 15^3 - 28^3$.

Q16. Factorise : $2\sqrt{2}a^3 + 16\sqrt{2}b^3 + c^3 - 12abc$.

Q17. Factorise : $x^8 - y^8$.

Q18. If $2x + y = -5$, prove that $8x^3 + y^3 - 30xy + 125 = 0$.

Q19. If $p(x) = x^3 - 4x^2 + x + 6$, then show that $p(3) = 0$ and hence factorise $p(x)$.

Q20. Factorise : $(m + 2n)^2 + 101(m + 2n) + 100$.