

DSB INTERNATIONAL PUBLIC SCHOOL

RISHIKESH (UTTARAKHAND)

Class - X

Subject	SUMMER ASSIGNMENT(2019-20)
MATHS	PLEASE VISIT SCHOOL WEBSITE FOR SUMMER ASSIGNMENT (CH-1 TO CH-4) ACTIVITY-1 : TO OBTAIN THE ZEROES OF POLYNOMIALS FROM GRAPH ACTIVITY-2 : TO OBTAIN THE CONDITIONS FOR CONSISTENCY AND INCONSISTENCY OF SYSTEM OF LINEAR EQUATIONS IN TWO VARIABLES.
ENGLISH	WATCH THE MOVIE DUNKIRK / THE DARKEST HOUR PACIFIC RIM & WRITE ITS REVIEW IN ABOUT 300-350 WORDS & WHICH CHARACTER YOU LIKE THE MOST & WHY
ART & CRAFT	1. Decorate a pillow cover by using fabric colour painting (only for boys). 2. Decorate a cushion cover by using fabric colour painting (only for girls)

SOCIAL SCIENCE

Prepare a project as per the following guidelines:

1. **Roll no. 1-15** Make a project on CONSUMER AWARENESS
2. **Roll no. 16-30** Prepare a project on SOCIAL ISSUES
3. **Roll no. 31-45** Make a project on SUSTAINABLE DEVELOPMENT

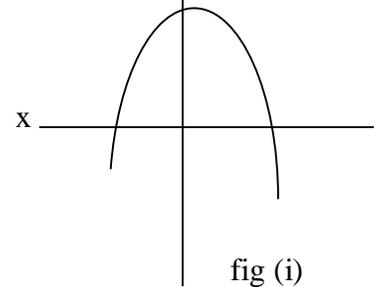
GUIDELINES FOR THE PROJECT-

1. Project to be done on A-4 size sheet
2. Project should be hand written for 15 pages
3. On the first page student Performa to be given- Name, Class, Roll no. Name of the school, Year of submission and topic
4. Acknowledgement
5. Content or Index
6. At the last Bibliography or references
7. Newspaper cuttings, diagram, illustrations are must
8. Use your NCERT book for reference

MATHEMATICS ASSIGNMENT (CHAPTER 1 – 4) (2019 - 2020)

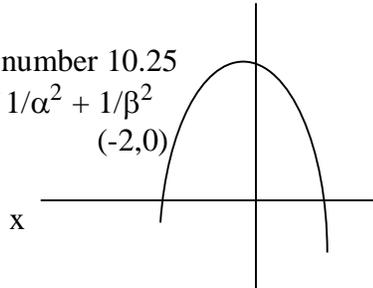
(LEVEL 1)

1. State Euclid division lemma.
2. State Fundamental Theorem of Arithmetic.
3. Find the HCF of 105 and 245 by Euclid division algorithm.
4. Express 296 as a product of its primes
5. Find the HCF and LCM of 75 and 160 by Fundamental theorem of Arithmetic and verify $\text{LCM} \times \text{HCF} = \text{product of two numbers}$
6. If HCF of 30 and 45 is 15. Find the LCM.
7. Prove $5 + 2\sqrt{3}$ is irrational
8. Check whether $17/210$ is terminating or non-terminating.
 x'
9. Find the zeros and verify the relation between zeros and coefficients of (i) $x^2 + 11x + 30$ (ii) $x^2 - 9$
10. Find the number of zeros of in fig (i)
11. Find a quadratic polynomial whose sum and product of zeros are $1/3$ and $-1/3$
12. Divide $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$ and verify the division algorithm
13. On dividing $2x^3 + 4x^2 + 5x + 7$ by $g(x)$ the quotient and remainder are $2x$ and $7 - 5x$ respectively. Find $g(x)$
14. State the condition so that the pair of linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ have no solution, unique solution or infinite solution.
15. For what value of k the eq. $kx + 3y - (k - 3) = 0$ and $12x + ky - k$ have infinite many solution
16. Check whether $7x + 3y = 27$ and $2x + 5y = 16$ have unique solution, no solution or infinite many solution.
17. Check whether $2x + 3y = 7$ and $4x + 6y = 16$ are consistent or inconsistent.
18. Find k if $kx + 3y + 1 = 0$ and $2x + y + 3 = 0$ has unique solution.
19. Check whether $5x - 3y = 11$ and $-10x + 6y = -22$ represent an intersecting lines, parallel lines or coincident lines.
20. Solve: $2/x + 2/3y = 1/6$ and $3/x + 2/y = 0$
21. Solve graphically $x - y + 1 = 0$ and $3x + 2y - 12 = 0$
22. Solve $6x + 3y = 6xy$ and $2x + 4y = 5xy$
23. Check whether $x = -1$ is a solution of equation $4x^2 - 3x - 1 = 0$
24. Find k if one root of equation $x^2 + kx - 4 = 0$
25. Solve by factorization: $9x^2 - 3x - 20 = 0$
26. Solve by completing square method: $6x^2 - 13x - 5 = 0$
27. Find the nature of roots of equation $9x^2 + 12x + 4 = 0$
28. Find k if $2kx^2 + 6x + 5 = 0$ has equal roots.
29. Solve $x - 1/x = 3$



MATHEMATICS ASSIGNMENT (CHAPTER 1 – 4) (2019 - 2020)

(LEVEL 2)

30. Show that any positive even integer is of the form $4q$ or $4q + 2$, where q is a whole number.
31. A magazine seller purchased 45 Hindi novels and 72 English novels. Each novel has same size. English and Hindi novels are to be packed in separate bundles and each bundle must contain same number of novels. Find the least number of packets which can be made for 117 novels.
32. Check whether 6^n and 15^n can end with the digit zero.
33. Give reason that $2 \times 3 \times 5 \times 17 + 13$ is a composite number.
34. Radius of a circular track is 63m. Two cyclists Sonu and Mohit start together from the same point and in same direction with speeds 33m/min and 44m/min respectively. After how many minutes they meet again at the starting point?
35. Prove $\sqrt{3}$ is irrational.
36. What can you say about the factors of the denominator of the rational number 10.25
37. α and β are the zeros of the polynomial $2x^2 + 3x + 4$ find the value of $1/\alpha^2 + 1/\beta^2$
38. Find the zeros of the polynomial represented by the fig (i)

39. Find all other zeros of the polynomial $x^4 + x^3 - 9x^2 - 3x + 18$
 x'
 if it is given that two of the zeros are $-\sqrt{3}$ and $\sqrt{3}$
40. What must be added to the polynomial $5x^4 + 6x^3 - 13x^2 - 44x + 7$ so that the resulting polynomial is divisible by $x^2 + 4x + 3$.
41. Draw the graph of the following: $3x + y + 1 = 0$ and $2x - 3y + 8 = 0$ Also find the area bounded by these lines and $y=0$.
42. For what values of a and b the following system of equations have infinite many solutions: $3x - (a + 1)y = 2b - 1$ and $5x + (1 - 2a)y = 3b$
43. Solve: $\frac{2}{x+2y} + \frac{1}{2x-y} + \frac{5}{9} = 0$; $\frac{9}{x+2y} + \frac{6}{2x-y} + 4 = 0$
44. A two digit number can be obtained either multiplying the sum of the digits by 8 or multiplying the difference of the digits by 14 and adding 2. Find the number.
45. For what value of k the following equation will be a quadratic equation $(2k - 1)x^2 + kx + 3 = 0$.
46. A small scale industry produces certain number of items per day. The cost of production of each item was calculated to be 74 minus twice the number of articles produced in a day. On a particular day the total cost of production was Rs. 540. Find the number of articles produced.
47. Solve by factorization: $a^2x^2 - (a^2b^2 + 1)x + b^2 = 0$
48. Solve: $\frac{x-a}{x-b} + \frac{x-b}{x-a} = \frac{a}{b} + \frac{b}{a}$
49. The hypotenuse of a right triangle is 4m less than twice the shortest side and third side is 4m more than the shortest side. Find the sides of the triangle.
50. Find the roots of the equation $3x^2 + 6x + 1 = 0$ by method of completing perfect square.
51. A shopkeeper buys a number of books for Rs. 80. If he had bought 4 more books for the same amount, each would have cost Rs 1 less. How many books did he buy?
52. Determine the value of k for which the equation $x^2 - 2(1 + 3k)x + 7(3 + 2k) = 0$ has equal roots.

MATHEMATICS ASSIGNMENT (CHAPTER 1 – 4) (2019 - 2020)
(LEVEL 3)

53. Find the largest number that will divide 398, 436 and 542 leaving remainders 7, 11 and 15 respectively.
54. Use Euclid division algorithm to find HCF of 56 and 72 and hence express it in the form of $56x + 72y$.
55. 72 liters of liquid A and 108 liters of liquid B are to be packed in containers of same size. Find the minimum number of containers required.
56. In an examination 350 students have to appear in English and 210 students have to appear in Mathematics. All the students in a room should be of the same subject. If same number of students are to be seated in each room, find the minimum number of rooms required.
57. The size of a hall is 30m x 36m, find the largest square carpet which can be used to cover the hall completely without overlapping. Also, find the number of such carpets.
58. If the sum of the squares of zeros of the polynomial $6x^2 + x + k$ is $25/36$, find the value of k
59. If α and β are the zeros of the polynomial $x^2 + 5x + k$, and $\alpha^2 + \beta^2 = 11$ find k
60. If α and β are the zeros of the polynomial $x^2 - 3x + 7$, find a quadratic polynomial whose zeros are $1/\alpha$ and $1/\beta$
61. Raman has two daughters Deepa and Anju. Present age of Raman is nine more than that of twice the sum of Deepa and Anju. Five years hence, the age of Raman will be 4 more than one and half times the sum of the ages of Deepa and Anju. Determine the age of Raman
62. Solve : $bx/a - ay/b + a + b = 0$ and $bx - ay + 2ab = 0$
63. Solve by factorization : $(a + b)^2x^2 - 4abx - (a - b)^2 = 0$
64. Solve : $\frac{1}{x - a - b} + \frac{1}{a} + \frac{1}{b} = \frac{1}{x}$
65. Two trains X and Y start from a railway station at the same time. The X train travels due west and the Y train due north. The X train travels 5km/hr faster than the Y train. If after two hours, they are 50 km apart, find the average speed of two trains.
66. By reducing the list price of a shirt by Rs. 200 a person can buy 3 shirts more for Rs. 12000. Find the original price of the shirt.
67. Solve by quadratic formula: (i) $9x^2 - 3(a + b)x + ab = 0$ (ii) $p^2x^2 + (p^2 - q^2)x - q^2 = 0$
68. Raghu and Mohan together finish a work in 15 days. When they work separately, Raghu takes 16 days less than the number of days taken by Mohan to finish the same work. Find the number of days taken by Mohan to finish the work
69. If (-5) is a root of the quadratic equation $2x^2 + px - 15 = 0$ and the quadratic equation $p(x^2 + x) + k = 0$ has equal roots, find the value of k .
70. Find p so that $4x^2 - 3px + 9 = 0$ has real roots.

ACTIVITY

ACTIVITY 1: To obtain the zero/es of the polynomial from the graph.

ACTIVITY 2: To obtain the conditions for consistency and inconsistency of the system of linear equations in two variables.