

DAV Int. School.
 Sub - maths Chapter Pair of Linear Eq. in two variables
 Assignment - Sheet - 3. Std XH

1. One linear equation is $-5x + 7y = 2$. Write another linear equation that may make a pair of dependent linear equations.
2. If $2x - y = 3$ and $-x + 2y = 3$, then find the value of $(x + y)$.
3. If $x = a$ and $y = b$ is the solution of the equations $2x + y = 3$ and $x - y = 2$, then find the values of 'a' and 'b'.
4. Which of the following is a solution of the pair of equation, $3x + 2y = 20$ and $6x - 5y = 4$ is
 (a) $x = 2, y = 1$ (b) $x = 4, y = 4$ (c) $x = 6, y = 7$ (d) $x = 5, y = 3$
5. The pair of linear equations $2x + 3y = 10$ and $3x + 2y = 10$ is :
 (a) dependent (b) inconsistent
 (c) consistent (d) consistent and dependent
6. The pair of linear equations $6x - 7y = 1$ and $3x - 4y = 5$ has :
 (a) unique solution (b) two solutions
 (c) infinitely many solutions (d) no solution
7. Ritesh says his daughter, "Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be." Represent this situation algebraically.
8. Is $x = 5, y = 3$ not a solution of the pair of equations $3x - 2y = 4$ and $6x - 4y = 8$?
9. If $x = 2, y = 3$ is a solution of a pair of lines $2x - 3y + a = 0$ and $2x + 3y - b + 2 = 0$, then find the values of a and b .
10. Find the value of 'v' satisfying both the equations $2x - 6 = y$ and $x - y = 1$.
11. The sum of a two digit number and the number obtained by reversing the order of its digits is 165. If the digits differ by 3, find the number.
12. In a competitive examination, one mark is awarded for each correct answer, while half mark is deducted for each wrong answer. Rajiv answered 120 questions and got 90 marks. How many questions did he answer correctly?
13. Pocket money of Zahira and Zohra are in the ratio 6 : 5 and the ratio of their expenditures are in the ratio 4 : 3. If each of them save ₹ 50 at the end of the month, find their pocket money.
14. The sum of the digits of a two digit number is 12. The number obtained by interchanging the two digits exceeds the given number by 18. Find the number.
15. Eight times a two digit number is equal to three times the number obtained by reversing the order of its digits. If the difference between the digits is 5, find the number.
16. A part of monthly expenses of a family is constant and the remaining varies with the price of rice. When the cost of rice is ₹ 250 per quintal, the monthly expenditure of the family is ₹ 1000 and when the cost of rice is ₹ 240 per quintal the monthly expenditure is ₹ 980. Find the monthly expenditure of the family when the cost of rice is ₹ 300 per quintal.
17. The students of a class are made to stand in rows. If three students are extra in each 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.
18. On reversing the digits of a two digit number, number obtained is 9 less than three times the original number. If difference of these two numbers is 45, find the original number.
19. 5 years ago, age of one sister was twice the other sister. 5 years hence, their ages will be in the ratio 2 : 3. Find their present ages.
20. ΔABC is an equilateral triangle in which $AB = (3x + 1)$ cm, $BC = (2x + 3y + 5)$ cm and $AC = (x + 9y + 6)$ cm. Find values of x or y and the side of the equilateral triangle.
21. A sum of a two digit number and number obtained on reversing the digits is 99. If number obtained on reversing the digits is 9 more than the original number, find the number.

22. Solve the following system of equations :
 $148x + 231y = 610$; $231x + 148y = 527$
23. The sum of the numerator and denominator of a fraction is 12. If 1 is added to both the numerator and the denominator, the fraction becomes $\frac{3}{4}$. Find the fraction.
24. Solve the following pair of linear equations by substitution method :
 $x + 3y = 15$; $2x - y = 2$
25. The taxi charge in a city consists of a fixed charge together with the charge for the distance covered. For a distance of 8 km, the charge paid is ₹ 111 and for a journey of 12 km, the charge paid is ₹ 159. What are the fixed charges and charge per km ? How much does a person have to pay for travelling a distance of 5 km ?
26. The ages of mother and daughter are in the ratio 9 : 4. Five years ago age of mother was 10 years more than twice the age of her daughter. Find their present ages.
27. The difference between two numbers is 26 and one number is three times the other. Find them.
28. Solve the pair of linear equations $3x + y = -1$ and $-2x + 3y = 19$. Hence, find the value of m for which $y = mx + 3$, if their point of intersection lies on the line $y = mx + 3$.
29. Find the value of ' k ' for which the following system of equations represents a pair of coincident lines :
 $x + 2y = 3$; $(k - 1)x + (k + 1)y = k + 3$
30. Represent the following pair of linear equations graphically and hence comment on the condition of consistency of this pair :
 $x - 5y = 6$; $2x - 10y = 12$
31. Solve the following pair of equations graphically :
 $x + y = 6$; $3x - y = 10$
32. Draw graph of following pair of linear equations :
 $y = 2(x - 1)$; $4x + y = 4$
 Also, write the co-ordinates of the points where these lines meet x -axis and y -axis.
33. Represent the following system of equations graphically :
 $x + 3y = 6$; $2x - 3y = 12$
 Also, shade the triangle formed by these two lines with y -axis.
34. Draw the graph of the following pair of linear equations :
 $4x - y = 4$; $3x + 2y = 14$
 Shade the region bounded by both the lines and $x = 0$.
35. Solve the following pair of linear equations graphically :
 $2x - 3y = 1$; $4x - 3y + 1 = 0$.
 Does the point (2, 3) lie on any one of the lines formed by the above given equations ? If yes, write the equation of the line.
36. Draw the graphs of $2x + y = 6$ and $2x - y + 2 = 0$. Shade the region bounded by these lines and x -axis. Find the area of the shaded region.
37. Draw the graphs of the following equations : $x + y = 5$, $x - y = 5$
 (i) Find the solution of the equations from the graph.
 (ii) Shade the triangular region formed by these lines and the y -axis.
38. Solve graphically the system of equations $5x - y = 7$ and $x - y + 1 = 0$. Calculate the area bounded by these lines and the y -axis.
39. Solve the following pair of linear equations graphically :
 $x + 3y = 6$, $2x - 3y = 12$
 Also, shade the region bounded by the line $2x - 3y = 12$ and both the co-ordinate axes.
40. Determine the values of m and n so that the following pair of linear equations has infinite number of solutions
 $(2m - 1)x + 3y = 5$
 $3x + (n - 1)y = 2$
41. Solve for x and y by cross multiplication method :
 $\frac{x}{a} - \frac{y}{b} = a - b$;
 $ax + by = a^3 + b^3$

22. Solve the following system of equations :
 $148x + 231y = 610$; $231x + 148y = 527$
23. The sum of the numerator and denominator of a fraction is 12. If 1 is added to both the numerator and the denominator, the fraction becomes $\frac{3}{4}$. Find the fraction.
24. Solve the following pair of linear equations by substitution method :
 $x + 3y = 15$; $2x - y = 2$
25. The taxi charge in a city consists of a fixed charge together with the charge for the distance covered. For a distance of 8 km, the charge paid is ₹ 111 and for a journey of 12 km, the charge paid is ₹ 159. What are the fixed charges and charge per km ? How much does a person have to pay for travelling a distance of 5 km ?
26. The ages of mother and daughter are in the ratio 9 : 4. Five years ago age of mother was 10 years more than twice the age of her daughter. Find their present ages.
27. The difference between two numbers is 26 and one number is three times the other. Find them.
28. Solve the pair of linear equations $3x + y = -1$ and $-2x + 3y = 19$. Hence, find the value of m for which $y = mx + 3$, if their point of intersection lies on the line $y = mx + 3$.
29. Find the value of 'k' for which the following system of equations represents a pair of coincident lines :
 $x + 2y = 3$; $(k - 1)x + (k + 1)y = k + 3$
30. Represent the following pair of linear equations graphically and hence comment on the condition of consistency of this pair :
 $x - 5y = 6$; $2x - 10y = 12$
31. Solve the following pair of equations graphically :
 $x + y = 6$; $3x - y = 10$
32. Draw graph of following pair of linear equations :
 $y = 2(x - 1)$; $4x + y = 4$
 Also, write the co-ordinates of the points where these lines meet x-axis and y-axis.
33. Represent the following system of equations graphically :
 $x + 3y = 6$; $2x - 3y = 12$
 Also, shade the triangle formed by these two lines with y-axis.
34. Draw the graph of the following pair of linear equations :
 $4x - y = 4$; $3x + 2y = 14$
 Shade the region bounded by both the lines and $x = 0$.
35. Solve the following pair of linear equations graphically :
 $2x - 3y = 1$; $4x - 3y + 1 = 0$.
 Does the point (2, 3) lie on any one of the lines formed by the above given equations ? If yes, write the equation of the line.
36. Draw the graphs of $2x + y = 6$ and $2x - y + 2 = 0$. Shade the region bounded by these lines and x-axis. Find the area of the shaded region.
37. Draw the graphs of the following equations : $x + y = 5$, $x - y = 5$
 (i) Find the solution of the equations from the graph.
 (ii) Shade the triangular region formed by these lines and the y-axis.
38. Solve graphically the system of equations $5x - y = 7$ and $x - y + 1 = 0$. Calculate the area bounded by these lines and the y-axis.
39. Solve the following pair of linear equations graphically :
 $x + 3y = 6$, $2x - 3y = 12$
 Also, shade the region bounded by the line $2x - 3y = 12$ and both the co-ordinate axes.
40. Determine the values of m and n so that the following pair of linear equations has infinite number of solutions :
 $(2m - 1)x + 3y = 5$
 $3x + (n - 1)y = 2$
41. Solve for x and y by cross multiplication method :
 $\frac{x}{a} - \frac{y}{b} = a - b$;
 $ax + by = a^3 + b^3$

Assignment Sheet No 2Std - Xth

1. Check whether $x^2 + 3x + 1$ is a factor of $3x^4 + 5x^3 - 7x^2 + 2x + 2$.
2. Find the polynomial when it is given that divisor, quotient and remainder are respectively $x^2 - 3x + 4$, $2x - 1$ and $x + 4$.
3. On dividing polynomial $x^3 - 4x^2 + 7x - 4$ by a polynomial $g(x)$, quotient and remainder are $x^2 - 2x + 2$ and x respectively. Find $g(x)$.
4. Give one example of a polynomial division process where $p(x) = q(x)g(x) + r(x)$.
(i) $\deg [r(x)] < \deg [g(x)]$
(ii) $\deg [p(x)] = \deg [q(x)]$
5. Find all the zeroes of $x^3 + 11x^2 + 23x - 35$, if two of its zeroes are 1 and -5.
6. On dividing the polynomial $p(x) = x^4 - 3x^3 - 5x^2 + 7x - 11$ by a polynomial $g(x)$, we get the remainder $-14x - 33$ and the quotient $x^2 - 6x + 11$. Find $g(x)$.
7. Obtain all the zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{5}$ and $-\sqrt{5}$.
8. If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder comes out to be $ax + b$. Find a and b .
9. Divide the polynomial $p(x) = 2x^4 - 4x^3 - 4x^2 + 6x - 2$ by the polynomial $g(x) = x^2 - 2$ and find the quotient and the remainder. Also, verify the division algorithm.
10. If three zeroes of a polynomial $x^4 + 2x^3 - x^2 - 2x$ are 0, 1 and -1, then find all the zeroes.
11. Divide $2x^4 - 9x^3 + 5x^2 + 3x - 8$ by $x^2 - 4x + 1$ and verify the division algorithm.
12. On dividing the polynomial $p(x) = 5x^4 - 3x^2 - 2x + 1$ by another polynomial $g(x) = x^2 + 2$, if the quotient is $ax^2 + bx + c$, find a , b and c .
13. Check whether $x^2 + 2x + 2$ is a factor of $x^4 + 3x^3 + 7x^2 + x + 13$ or not.
14. Find all the zeroes of the polynomial $f(x) = x^3 + 13x^2 + 32x + 20$, if one of its zeroes is -2.
15. Obtain all other zeroes of the polynomial $x^4 - 3x^3 - x^2 + 9x - 6$, if two of its zeroes are $\sqrt{3}$ and $-\sqrt{3}$.
16. Find the values of a and b so that $x^4 + x^3 + 8x^2 + ax + b$ is exactly divisible by $x^2 + 1$.
17. If the remainder on division of $x^3 + 2x^2 + kx + 7$ by $x - 3$ is 25, find the value of 'k' and the quotient. Hence, find the zeroes of the quotient so obtained.
18. If the polynomial $f(x) = 3x^4 + 3x^3 - 11x^2 - 5x + 10$ is completely divisible by $3x^2 - 5$, find all its zeroes.
19. Find the values of p and q so that 1 and -2 are the zeroes of the polynomial $f(x) = x^3 + 10x^2 + px + q$ and then find its third zero.

Assignment Sheet No 1 Chapter - Real Number

Std - Xth

1. Show that square of any positive odd integer is of the form $8k + 1$, where k is an integer.
2. Show that any positive even integer is of the form $6m$, $6m + 2$ or $6m + 4$, where m is some integer.
3. Show that any positive odd integer is of the form $8q + 1$ or $8q + 3$ or $8q + 5$ or $8q + 7$.
4. Find the decimal expansion of $\frac{919}{2^3 \times 5^2}$. Find out after how many decimal places it terminates.
5. By using Euclid's division algorithm, find the largest number which divides 650 and 1170.
6. Show that any positive even integer is of the form $4q$ or $4q + 2$ and any positive odd integer is of the form $4q + 1$ or $4q + 3$, where q is any integer.
7. Check whether 15^n can end with the digit zero (0) for any natural number n .
8. Show that the numbers 231 and 396 are not co-prime.
9. Find HCF of two numbers whose prime factorisation are expressible as $2^3 \times 5^2 \times 7 \times 13$ and $2^3 \times 5 \times 29$.
10. Explain why $7 \times 13 \times 11 + 11$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 3$ are composite numbers.
11. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they change simultaneously at 7 am, at what time will they change simultaneously again?
12. Write 32875 as product of prime factors. Is this factorisation unique?
13. Explain whether the number $3 \times 5 \times 13 \times 46 + 23$ is a prime number or a composite number.
14. State fundamental theorem of arithmetic.
Is it possible that HCF and LCM of two numbers be 24 and 540 respectively? Justify your answer.
15. Write down the decimal expansion of (i) $\frac{13}{3125}$ and (ii) $\frac{15}{1600}$.
16. Prove that $\sqrt{7}$ is an irrational number.
17. Prove that $3 + \sqrt{2}$ is an irrational number.
18. Prove that $\sqrt{2} - \sqrt{5}$ is an irrational number.
19. Prove that $3 + 2\sqrt{5}$ is an irrational number.
20. Prove that $(3 + 2\sqrt{5})^2$ is irrational.
21. Prove that $5 - 2\sqrt{5}$ is an irrational number.
22. Prove that $\frac{1}{2 + \sqrt{3}}$ is an irrational number.
23. Write down the decimal expansion of $\frac{16}{3125}$, without actual division.