	INDIAN SCHOOL AL WADI AL KABIR
	Class X, Mathematics
	Worksheet-Pair of Linear Equations in 2 Variables (DTQ)
	04-04-2024

Q. No.	Questions of 2 Mark each.
1.	A fraction becomes $\frac{1}{3}$ when 2 is subtracted from the numerator and it becomes $\frac{1}{2}$ when 1 is subtracted from the denominator. Find the fraction.
2.	Solve for x and y: 27x + 31y = 85, 31x + 27y = 89
3.	Given the linear equation $3x + 4y = 9$. Write another linear equation in these two variables such that the geometrical representation of the pair so formed is: (1) intersecting lines (2) coincident lines.
4.	x and y are 2 different digits. If the sum of the two - digit numbers formed by using both the digits is a perfect square, then what is the value of $x + y$?**(CFQ)**
5.	Solve the following system of linear equations by substitution method: $2x - y = 2$ $x + 3y = 15$

Questions of 3 Marks each.

6.	A part of monthly hostel charges in a college hostel are fixed and the remaining depends on the number of days one has taken food in the mess. When a student A takes food for 25 days, he has to pay ₹4,500, whereas a student B who takes food for 30 days, has to pay ₹ 5,200. Find the fixed charges per month and the cost of food per day.

7.	Seven times a two-digit number is equal to four times the number obtained by reversing the order of its digits. If the difference of the digits is 3, determine the number.
8.	Solve for x and y: $$\frac{x}{2} + \frac{2y}{3} = -1$$ $$x - \frac{y}{3} = 3$$
9.	4 chairs and 3 tables cost ₹ 2100 and 5 chairs and 2 tables cost ₹ 1750. Find the cost of one chair and one table separately.
10.	For what value of *k,* which the following pair of linear equations have infinitely many solutions: $2x + 3y = 7$ and $(k + 1)x + (2k – 1)y = 4k+ 1$

Questions of 5 Marks each.

11.	A father's age is three times the sum of the ages of his two children. After 5 years his age will be two times the sum of their ages. Find the present age of the father.
12.	Solve graphically the pair of linear equations: $$3x - 4y + 3 = 0 \text{ and } 3x + 4y - 21 = 0$$ Find the co-ordinates of the vertices of the triangular region formed by these lines and *x* -axis. Also, calculate the area of this triangle.
13.	The four-wheeler parking fees at a metro station is charged 2 parts – a fixed charge up to ₹ x up to 2 hours and ₹ y for every subsequent hour. i) Murli parked his car for 6 hours and paid ₹ 110. Aparna parked her car for 13 hours and paid ₹250. Frame a pair of linear equations representing the context and find the fixed charge and the subsequent charge per hour. ii) Amish parked his car at the station from 8 am to 3 pm. Find the amount Amish must pay as the parking charge.**(CFQ)**
14.	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. **(CFQ)**

Case Study Based

15. Mr. RK Agrawal is owner of a famous amusement park in Delhi. The ticket charge for the park is ₹ 150 per child and ₹ 250 per adult.

One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 300 tickets were sold and ₹ 55,000 was collected.

Based on the above, answer the following questions:

(i) If the number of children visited be x and the number of adults visited be y, then write the given situation algebraically.

(ii) (a) How many children visited the park that day?

OR

(b) How many adults visited the park that day?

(iii) How much amount will be collected if 250 children and 100 adults visit the amusement park?

Answers

1	$\dfrac{7}{15}$	**2**	x = 2, y = 1	**3**	Any equation satisfying the condition	**4**	11
5	(3,4)	**6**	1000₹, 140₹	**7**	36	**8**	2, -3
9	₹150, ₹500	**10**	5	**11**	45 yrs	**12**	x= 3, y = 3 (3,3), (-1,0), (7, 0) 12sq. units
13	(i)x + 4y =110; x + 11y = 250; ₹30, ₹20; (ii)₹130)	**14**	36	**15**	(i) x + y = 300, 3x + 5y = 1100 (ii) a) 200 OR b)100 (iii) ₹ 60,000