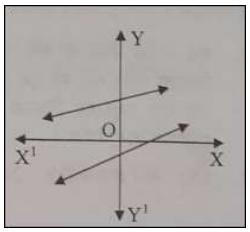
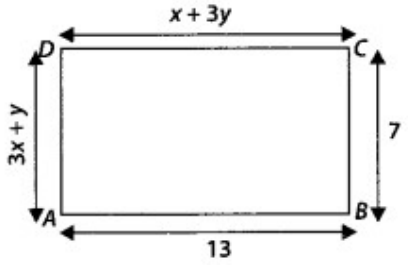
Freedom Valley School, Bardoli

Class:10th **WORKSHEET** **Chapter no: 3**

Teacher's sign: **Sub**: MATHS **Principal sign:**

	MULTIPLE CHOICE QUESTIONS (EACH CARRIES 1 MARK)
1.	The pair of equations x= -m and y = n graphically represents lines which are: (a) parallel (b) intersecting at (n , -m) (c) coincident (d) intersecting at (-m , n)
2.	For what value k, do the equations 2x – y + 3 = 0 and 6x – ky + 9 = 0 represent coincident lines? (a) 2 (b) – 2 (c) 3 (d) -3
3.	The value of k for which the pair of equations kx =y+2 and 6x=2y+3 has infinitely many solutions, (a) is k = 3 (b) does not exist (c) is k-3 (d) is k = 4
4.	One of the equations of a pair of inconsistent linear equations is 2x – 3y = - 5. The second equation can be: (a) 4x - 6y = -10 (b) 4x – 6y + 6 =0 (c) 6x – 9y +15 = 0 (d) 8x – 12y +20 = 0
5.	In the given figure, graphs of two linear equations are shown. The pair of these linear equations is:  (a) Consistent with unique solution. (b) Consistent with infinitely many solutions. (c) Inconsistent. (d) Inconsistent but can be made consistent by extending these lines.
6.	For what value of k the given pair of linear equations have no solution 5x+2y-7=0 and 2x+ky +1 =0 (a)$\frac{2}{5}$ (b) $\frac{5}{4}$ (c) $\frac{4}{5}$ (d) $\frac{5}{2}$
7.	The area of the triangle formed by the line $\frac{x}{a^2}+\frac{y}{b^2}=1$ with the coordinate axis is: (a) a^2b^2 (b) $\frac{1}{2}a^2b^2$ (c)$\frac{1}{2}$ ab (d) $2a^2b^2$
8.	If bx + ay = $a^2 + b^2$ and ax- by = 0, then the value of (x-y) is: (a) a-b (b) $a^2 + b^2$ (c) a^2-b^2 (d) b-a

9.	The pair of linear equations $2x+ky-3=0$, $6x+\frac{2}{3}y+7=0$ have unique solution if (a) $k=\frac{2}{3}$ (b) $k\neq\frac{2}{3}$ (c) $k=\frac{2}{9}$ (d) $k\neq\frac{2}{9}$
10.	If a pair of linear equations is consistent, then the lines are: (a) Intersecting or coincident (b) Always coincident (c) Always intersecting (d) Parallel
	SHORT ANSWER TYPE I QUESTIONS (EACH CARRIES 2 MARKS)
11.	Solve the pair of equations $x = 0$ and $y = -7$ graphically.
12.	The angles of a triangle are $x+5$, $y-5$ and $30°$. The difference between the two angles $x+5$ and $y-5$ is $40°$. Find x and y.
13.	Find the value of k for which the following pair of linear equations have infinitely many solutions: $2x+3y=7$ and $(k-1)x+(k+2)y=3k$.
14.	In a box, total number of Rs. 2 coins and Rs. 5 coins is 20. If total coins amount to Rs. 76, find the number of coins of each denomination.
15.	Twice the perimeter of a rectangular garden whose length is 8m more than its width is 72m. **Find the dimensions of the garden.**
16.	The sum of two numbers is 49. The greater number exceeds thrice the smaller number by 1. Find the larger number.
17.	Ram can row downstream 40km in 4 hours and upstream 8km in 4 hours. What will be the speed of rowing in still water?
18.	The sum of the digits of a two-digit number is 14. If 18 is subtracted from the number, the digits are reversed. Find the number.
19.	Mala has some goats and hens in her shed. Upon counting, Mala found that the total number of legs is 112 and the total number of heads in 40. Find the number of hens in her shed.
20.	The age of father is 22 years more than his son. In three years, the father's age will be twice that of his son. Find the present age of his son.
	SHORT ANSWER TYPE II QUESTIONS (EACH CARRIES 3 MARKS)
21.	If $51x+49y=150$ and $49x+51y=50$ then obtain the value of $x-y : x+y$
22.	A train covered a certain distance at a uniform speed. If the train would have been 6 km/h faster, it would have taken 4 hours less than the scheduled time. And, if the train were slower by 6 km/hr; it would have taken 6 hours more than the scheduled time. Find the length of the journey.
23.	If $2x + y = 23$ and $4x - y = 19$, find the values of $5y - 2x$ and $(y/x) - 2$.
24.	Find the values of x and y in the following rectangle 

25.	Solve the following pairs of equation $\frac{x}{3}+\frac{y}{4}=4,\ \frac{5x}{6}-\frac{y}{8}=4$
	LONG ANSWER TYPE QUESTIONS (EACH CARRIES 5 MARKS)
26.	Draw the graph 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.
27.	The age of the father is twice the sum of the ages of his two children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father.
28.	There are some students in the two examination halls A and B. To make the number of students equal in each hall, 10 students are sent from A to B. But if 20 students are sent from B to A, the number of students in A becomes double the number of students in B. Find the number of students in the two halls.
	CASE STUDY BASED QUESTIONS (EACH CARRIES 4 MARKS)
29.	Dipesh bought 3 notebooks and 2 pens for Rs. 80. Lokesh also bought the same types of notebooks and pens as Dipesh. He paid Rs.110 for 4 notebooks and 3 pens  i) Let the cost of one notebook be Rs.x and that of pen be Rs.y. Then form a pair of linear equations for Rs.80 and Rs.110. ii) What is the exact cost of each notebook? iii)What is the exact cost of each pen? **(OR)** iii)What is the total cost if they will purchase the same type of 15 notebooks and 12 pens?
30.	A test consists of ‘True’ or ‘False’ questions. One mark is awarded for every correct answer while ¼ mark is deducted for every wrong answer. A student knew answers to some of the questions. Rest of the questions he attempted by guessing. He answered 120 questions and got 90 marks. <table><tr><th>Type of Question</th><th>Marks given for correct answer</th><th>Marks deducted for wrong answer</th></tr><tr><td>True/False</td><td>1</td><td>0.25</td></tr></table> i)If answer to all questions he attempted by guessing were wrong, then how many

	questions did he answer correctly? ii) How many questions did he guess? iii) If answer to all questions he attempted by guessing were wrong and answered 80 correctly, then how many marks he got? **(OR)** iii) If answer to all questions he attempted by guessing were wrong, then how many questions answered correctly to score 95 marks?
31.	From Bengaluru bus stand, if Riddhima buys 2 tickets to Malleswaram and 3 tickets to Yeswanthpur, then the total cost is Rs 46; but if she buys 3 tickets to Malleswaram and 5 tickets to Yeswanthpur, then the total cost is Rs 74. Consider the fares from Bengaluru to Malleswaram and from Bengaluru to Yeswanthpur as Rs.x and Rs. y respectively, then answer the following questions. i)Write the linear equation in two variables for the 1st situation. ii)Form the linear equation in two variables for the 2nd situation. iii) Find the fare from Bengaluru to Malleswaram. **(OR)** iii) Find the fare from Bengaluru to Yeswanthpur.
	ASSERTION AND REASON BASED QUESTIONS (EACH CARRIES 1 MARK)
	Directions: In the following questions, a statement of **Assertion (A)** is followed by a statement of **Reason (R).** Mark the correct choice as: a)Both **Assertion (A)** and **Reason (R)** are true and **Reason (R)** is the correct explanation of **Assertion (A).** b)Both **Assertion (A)** and **Reason (R)** are true but **Reason (R)** is not the correct explanation of **Assertion (A)**. c) **Assertion (A)** is true but **Reason (R)** is false. d) **Assertion (A)** is false but **Reason (R)** is true.
32.	**Assertion (A):** The area of the rectangle formed by the lines representing x=5, y= 7 with the coordinate axis is 35 sq. units **Reason (R):** The system of equations x=5, y=7 is consistent with a unique solution.
33.	**Assertion (A):** Point P (2, -1) is the point on the line 3x + 2y = 4. **Reason (R):** The distance of point P (2, -1) from x-axis is 2 units.
34.	**Assertion (A): If the lines given by 6x + 2ky = -2, 4x + 5y - 1 = 0 are parallel, then the value of k is $\frac{15}{4}$** **Reason (R): For parallel lines $a_1/a_2 = b_1/b_2 \neq c_1/c_2$**

35.	**Assertion (A): If the lines intersect at a point, then that point gives the unique solution of the two equations.** **Reason (R): The pair of linear equation given by $a_1x+ b_1y+ c_1=0$ and $a_2x +b_2y +c_2=0$ where** **$a_1/a_2 = b_1/b_2 \neq c_1/c_2$, in this case, the pair of linear equations are consistent.**
36.	**Assertion (A):** The graph of the linear equations $4x+y=12$ and $4x-2y=4$ represents a pair of intersecting lines. **Reason (R):** The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ represents a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$
37.	**Assertion (A): The angles of cyclic quadrilaterals ABCD are: $A = (6x+10)^0$, $B=(5x)^0$,** **$C= (x+y)°$ and $D=(3y-10)°$. The value of x and y is 20° and 30°** **Reason (R): In cyclic quadrilaterals, the sum of the opposite angles is 180°.**
38.	**Assertion (A): The lines represented by the pair of linear equations $8x- 3y =0$ and $4x - 3y = 8$ intersect each other.** **Reason (R): The pair of linear equations $6x - 5y = 0$ and $3x - 3y = 8$ are inconsistent.**
39.	**Assertion (A): If two lines are parallel; then the pair of equations have infinite solutions.** **Reason (R): The pair of linear equation representing parallel line is inconsistent.**
40.	**Assertion (A): If the lines coincide, then there are infinitely many solutions for the given pair of equation.** **Reason (R): The pair of linear equations representing coincident lines are inconsistent.**
41.	**Assertion (A): The graphical representation of a pair of equations $4x + 3y – 1 = 5$ and $12x + 9y = 15$ will be parallel lines.** **Reason (R): If the given pair of equations have no solution. That means, the lines representing the given pair of equations are parallel to each other.**