GLOBAL INDIAN SCHOOL , AJMAN

GRADE X	WORKSHEET	MATHEMATICS
CHAPTER 3 : PAIR OF LINEAR EQUATIONS IN TWO VARIABLES		

LEVEL 1

1. The equation of a line which is parallel to x – axis and is at a distance of 6 units above it is :

   (a) x = – 6 (b) x = 6 (c) y = 6 (d) y = – 6

2. The pair of equations x + y = 40 and x – 2y + 14= 0 have :

   (a) unique solution (b) exactly two solutions

   (c) infinitely many solutions (d) no solution

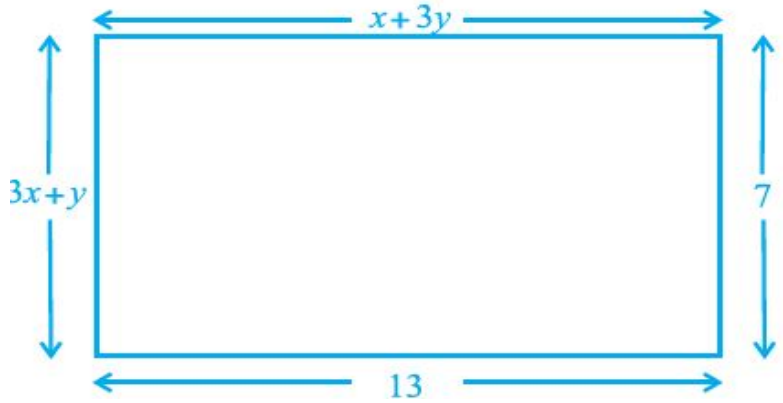
3. If the sum of two numbers is 6 and their difference is 4, then the numbers are :

   (a) – 4, 10 (b) 5, 1 (c) –5, –1 (d) 10, – 4

4. Solve for x and y, $149x - 330y = -511$, $-330x + 149y = -32$.

5. Ritu can row downstream 20 km in hours and upstream 4 km in 2 hours. Find her speed of rowing in still water and the speed of the current.

6. Find the values of x and y in the following rectangle.



LEVEL 2

7. The pair of equations x = 0 and x = – 5 has :

   (a) one solution (b) two solutions

   (c) infinitely many solutions (d) no solution

8. The sum of the digits of a two digit number is 9. If 27 is added to it, the digit of the number get reversed. The number is :

   (a) 25 (b) 63 (c) 72 (d) 36

9. The point at which the graph lines of the equations $ax + by = 0$ and $ax - by = 0$ intersect is :

   (a) (a, 0) (b) (b , 0) (c) (0, 0) (d) (a, b)

10. Solve : (i) $px + qy = p - q$; $qx - py = p + q$

    (ii) $(a - b)x + (a + b)y = a^2 - 2ab - b^2$; $(a + b)(x + y) = a^2 + b^2$

11. Yash scored 40 marks in a test, getting 3 marks for each right answer and losing 1 mark for each wrong answer. Had 4 marks been awarded for each correct answer and 2 marks been deducted for each incorrect answer, then Yash would have scored 50 marks. How many questions were there in the test?

12. 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.

LEVEL 3

13. The value of k for which the pair of linear equations $3kx + 6y = \sqrt{50}$ and $\sqrt{18}\,x + \sqrt{24}\,y = \sqrt{75}$ have a unique solution is :

   (a) $k \neq -6$ (b) $k \neq 6$ (c) $k \neq \sqrt{3}$ (d) $k \neq -3$

14. The area of the triangle formed by the line $\frac{x}{a} + \frac{y}{b} = 1$ with the coordinate axes is:

   (a) ab (b) 2ab (c) $\frac{1}{2}$ ab (d) $\frac{1}{4}$ ab

15. For what value of α, the system of equations $\alpha x + 3y = \alpha - 3$; $12x + \alpha y = \alpha$ will have no solution?

(a) $\alpha = -6$ (b) $\alpha = 6$ (c) $\alpha = 4$ (d) $\alpha = -4$

16. Determine graphically, the coordinates of the vertices of a triangle, the equations of whose sides are: $y = x$, $y = 2x$ and $y + x = 6$.

17. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars?

18. A train covered a certain distance at a uniform speed. If the train would have been 10 km/h faster, it would have taken 2 hours less than the scheduled time. And, if the train were slower by 10 km/h, it would have taken 3 hours more than the scheduled time. Find the distance covered by the train.

ANSWERS:

1. (c) 2. (a) 3.(b) 4. $x = 1$, $y = 2$

5. Ritu's speed in still water = 6 km/h, Speed of current = 4 km/h 6. $x = 1$, $y = 4$

7 (d) . 8. (d) 9. (c) 10. (i) $x = 1$, $y = -1$ (ii) $x = a + b$, $y = \frac{-2ab}{a+b}$

11. 20 12. 36 13. (c) 14. (c) 15. (a) 16. (2, 4), (3, 3), (0,0)

17. Speed of the car at A = 60 km/h, Speed of the car at B = 40 km/h, The difference of speeds is 20 km/h 18. 600 km