**SAINIK SCHOOL GOPALGANJ**

**SUMMER VACATION ASSIGNMENT**

**SUBJECT: MATHEMATICS**

**CLASS: IX**

**Chapter 3**

**Coordinate Geometry**

1. To obtain mirror image of figure with respect to a given line on a graph paper.

2. Design a crossword puzzle with some mathematical terms and the words should be filled ACROSS and DOWN.

3. A field is in the shape of a parallelogram has sides 60m and 40m and one of its diagonals is 80m long. Find the area of the parallelogram.

4. The perimeter of a triangular field is 420m and its sides are in the ratio 1:2:3. Find the area of the triangular field.

5. The quadrilateral whose diagonals measure 48 m and 32 m respectively and bisect each other at right angles. Find its area and perimeter.

6. ABCD is a trapezium of area 91 sq.cm. CD is parallel to AB and CD is longer than AB by 8cm. If the distance between AB and CD is 7cm, find AB and CD.

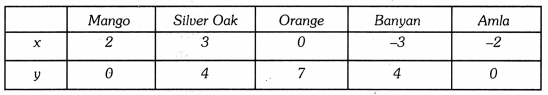
7. The length of the sides forming right angle of a right angled triangle are 5x cm and

( 1) −3x cm. If the area of the triangle is 60 sq.cm., find its hypotenuse.

8. Draw a trapezium in the coordinate plane whose vertices are A(4, 6); B( − 2, 3) ; C( − 2, − 5) D(4, − 7).

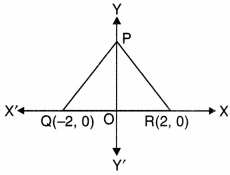
9. Find out the quadrants in which the following points lie: P( − 7, 6 ); Q( 7, − 3 ) ; R( − 4, 4 ) ; S( − 2, − 5 ).

10. Draw a rectangle ABCD in the coordinate plane such that its vertices are A( 4, 3); B( 4, − 2) C(7, 3 ) and D ( −7, −C)

11. n environment day, class-9 students got five plants of mango, silver oak, orange, banyan and amla from soil department. Students planted the plants and noted their locations as (x, y).  
  
Plot the points (x, y) in the graph and join them in the given order. Name the figure you get. Which social act is being done by students of class-9 ?

12. Write the coordinates of two points on X-axis and two points on Y-axis which are at equal distances from the origin. Connect all these points and make them as vertices of quadrilateral. Name the quadrilateral thus formed.

13. Plot the points A(3, 2), B(-2, 2), C(-2, -2) and D(3, -2) in the cartesian plane. Join these points and name the figure so formed.

14. In the given figure, PQR is an equilateral triangle with coordinates of Q and R as (-2, 0) and (2, 0) respectively. Find the coordinates of the vertex P.  
Solution:  


15. If the coordinates of a point M are (-2, 9) which can also be expressed as (1 + x, y) and y > 0, then find in which quadrant do the following points lie : Ply, x), Q(2, x), R(x, y − 1), S(2x, -3y).

16. Plot D(-2, -3) on the graph paper. Also, plot reflections of D in x-axis and y-axis.

17. i) Plot the points M(4, 3), N(4, 0), 0(0, 0), P(0, 3).  
(ii) Name the figure obtained by joining MNOP.  
(iii) Find the perimeter of the figure.

18. Plot the points A(2, 5), B(8,5) and C(5, -3) and join AB, BC and CA. What figure do you obtain ?

19. Plot the following points, join them in order and identify the figure thus formed : A(1, 3), B(1, -1), C(7, -1) and D(7, 3)  
Write the coordinates of the point of intersection of the diagonals.

20. Plot the points A(1, 4), B(-2, 1) and C(4, 1). Name the figure so obtained on joining them in order and also, find its area.