Vanshika Gupta
IX B.

BHARAT RAM GLOBAL SCHOOL, GREATER NOIDA
PERIODIC TEST-2 (2017-18)
Subject: Mathematics
CLASS - IX (SET A)

M.M.: 40 TIME: 1 Hour 30 minutes

- Attempt all the questions.
- All the answers must be correctly numbered.
- Calculations must be shown in the rough work column.
- Question 5 c must be done on a graph paper.

1. Fill in the blanks. **(0.5x4=2)**

a. The linear equation of the type y=mx, m ≠0 has_____ solution.

b. The diagonals of a square are equal and _____each other.

c. A point at which two sides of a quadrilateral meet is called as_____ .

d. Area of a parallelogram when its base side is b cm and the corresponding perpendicular length is h cm is equal to _____.

2. State true or false with proper reason: **(1x5=5)**

a. Two figures having equal areas are always congruent.

b. In a quadrilateral if the diagonals are equal, it cannot be a rhombus.

c. The median of a triangle divides the triangle into isosceles triangles.

d. The linear equation, y=4 represents a line parallel to y-axis.

e. The area of a triangle and the area a parallelogram, lying between the same base and between the same parallels is the same.

3. Give proper statements and reasons to solve the following: **(2x5=10)**

a. If ABCD is a quadrilateral in which P,Q,R and S are the mid points of the sides AB,BC,CD and DA respectively as shown in figure 1. AC is the diagonal, show that:

i) SR is parallel to AC and SR = $\frac{1}{2}$ of AC

ii) PQ=SR

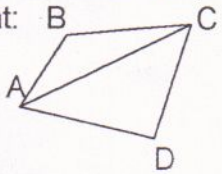

Fig.1

b. Prove that diagonals of a rhombus bisect each other.

c. Write the linear equations of two lines passing through point (1, 2). How many such equations are possible?

d. In a parallelogram ABCD, AB = 8CM. The altitude AE corresponding to side AB and AD are respectively 4 cm and 5cm .find the side AD.

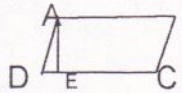

fig 2.

e. In which quadrant or on which axis do each of the points (-2,4), (3,-1),(-1,0) and (-3,-5) lie? Verify your answer by locating them on the Cartesian axis in your answer sheet.

4. Do suitable constructions to solve the following. **(2.5x2=5)**

a. State and prove the mid-point theorem with the help of a suitable diagram.

b. Prove that angles opposite to equal sides of an isosceles triangle are equal.

5. Do as directed: **(3x5=15)**

a. Prove that two triangles having the same base and equal areas lie between the same parallels.

b. ABCD is a trapezium with AB parallel to DC. A line parallel to AC intersects AB at X and BC at Y. Prove that ar(ADX)=ar(ACY)

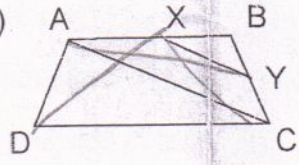

fig 3

c. Draw the graph of the linear equation $2x+y = 3$.

d. AB is a line segment and line l is its perpendicular bisector. If a point P lies on l , show that P is equidistant from A and B.

e. If measures opposite angles of a parallelogram are $(60^0 - x^0)$ and $(3x^0 - 4)$, then find the measures of all the angles of the parallelogram.

6. Construct a triangle ABC in which base AB = 5cm , angle A = 30^0 and AC – BC=2.5 cm **(3)**

$2+y=3$

$y=1$

$4+y=3$