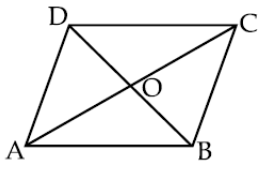
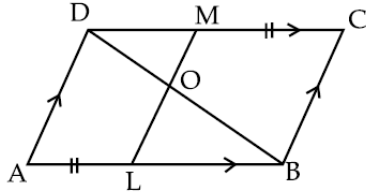




INDIAN SCHOOL AL WADI AL KABIR
HOLIDAY HOMEWORK- MATHEMATICS (CBSE Questions)
CLASS IX **Date: 14-12-2015**

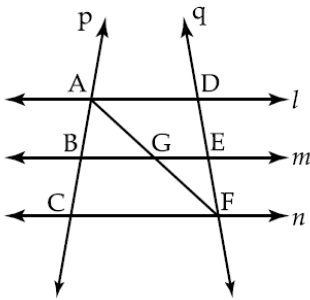
1. The cost of a book is four times the cost of a notebook. Express this statement as a linear equation in two variables. Write the equation in the form $ax + by + c = 0$. 2
2. In $\triangle ABC$, $\angle B = 90^\circ$, D and E are the mid-points of the sides AB and AC respectively. If $AB = 6$ cm and $AC = 10$ cm, then find the length of DE. 2
3. ABCD is a quadrilateral in which P, Q, R and S are mid-points of AB, BC, CD and DA respectively. AC is the diagonal. Prove that $SR \parallel AC$ and $SR = \frac{1}{2} AC$. 2
4.  2
ABCD is a rhombus. $AO = 5$ cm. Area of the rhombus is 25 sq cm. Find the length of BD.
5. In a cricket match, a batsman hits a boundary 6 times out of 30 balls played. Find the probability that he did not hit a boundary. 2
6. In $\triangle ABC$, $AB = 12$ cm, $BC = 15$ cm and $AC = 7$ cm. Find the perimeter of the triangle formed by joining the mid points of the sides of the triangle. 2
7. The point (3, 4) lies on the graph of the equation $3y = ax + 7$; Find the value of 'a' 2
8. Construct a triangle ABC in which $BC = 4$ cm, $\angle B = 30^\circ$ and $AB + AC = 6$ cm. 3
9. Draw the graph of the equation $y = -x + 1$ and find the point where the graph meets the axes. 3
10. The linear equation that converts Fahrenheit (F) to Celsius (C) is given by the relation $C = \frac{5(F - 32)}{9}$. 3
What is the numerical value of the temperature which is same in both the scale ?
11. In a quadrilateral ABCD, AO and BO are the bisectors of $\angle A$ and $\angle B$ respectively. 3
Prove that $\angle AOB = \frac{1}{2} (\angle C + \angle D)$.
12. Show that if the diagonals of a quadrilateral bisect each other at right angles, then it is a rhombus. 3
13. In $\triangle ABC$, AD is the median through A and E is the midpoint of AD. BE produced meets AC in F. Prove that $AF = \frac{1}{3} AC$. 3
14. It is known that a box of 550 bulbs contains 22 defective bulbs. One bulb is taken out at random from the box. Find the probability of getting 3
 - (i) Defective bulb,
 - (ii) Good bulb.

15. 3



ABCD is a parallelogram. L and M are points on AB and DC respectively such that $AL = MC$. Prove that LM and BD bisect each other.

16. 3
l, m, and n are three parallel lines intersected by transversal *p* and *q* such that *l, m* and *n* cut equal intercepts AB and BC on *p*. Show that *l, m, n* cut off equal intercepts DE and EF on *q* also.



17. Calculate the Arithmetic mean of the following data : 3

Marks obtained	40	88	60	52	63	75	70
Number of students	3	5	4	7	6	2	3

18. D, E and F are respectively the mid-points of BC, CA and AB of ΔABC . Show that $ar(\Delta DEF) = \frac{1}{4} ar(\Delta ABC)$. 4

19. Draw a histogram for the following data : 4

X	10 - 15	15 - 20	20 - 25	25 - 30	30 - 40	40 - 60	60 - 80
F	7	9	8	5	12	12	6

20. Draw the graph $2x + y = 4$ and find the area of the triangle formed by the line with *x*-axis and *y*-axis. 4

21. Prove that parallelograms on the same base and between the same parallels are equal in area. 4

22. Prove that a diagonal of a parallelogram divides it into two congruent triangles. 4

23. A number consists of 2 digits. The digit at tens place is 2 times the digit in unit place. The number formed by reversing the digit is 27 less than the original number. Find the number. 4

24. Draw a frequency polygon for the following data : 4

Cost of living Index	140-150	150-160	160-170	170-180	180-190	190-200
Number of weeks	5	10	20	9	6	2