KANHA MAKHAN PUBLIC SCHOOL

Important Questions (Maths)

Class- 9th

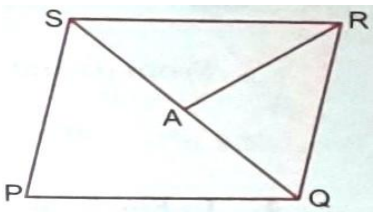
Areas of Parallelograms and Triangle

One mark questions-

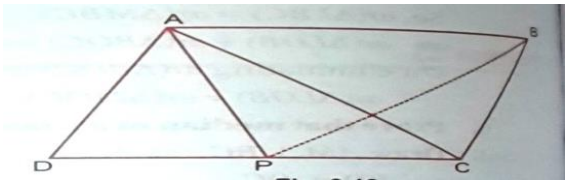
1- The area of a rhombus is 10 cm^2. If one of its diagonal is 4 cm, then find the other diagonal.
2- The area of parallelogram ABCD is 25 cm^2. What is the area of triangle ABC.
3- If a triangle and a parallelogram and a parallelogram are on the same base and between the same parallels, then find the ratio of the area of the triangle to the area of parallelogram.
4- Prove that median of a triangle divides it into two triangles of equal area.
5- In a parallelogram ABCD, AB=16 cm. The altitude corresponding to sides AB and AD are respectively 8 cm and 10 cm. Find AD.

Two mark questions-

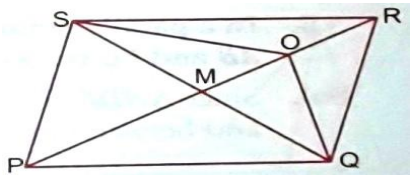
1- PQRS is a parallelogram whose area is 180 cm^2 and A is any point on the diagonal QS. The area of Δ ASR=90 cm^2. Find this statement is true or false.



2- ABCD is a parallelogram. P is any point on CD. If area Δ DPA=15 cm^2, find the area Δ APB.

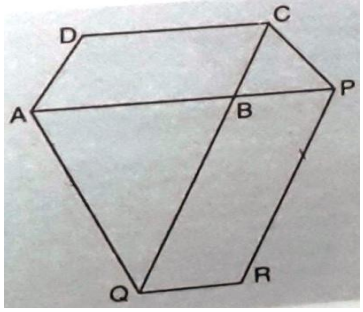


3- Show that the area of a rhombus is half the product of the lengths of its diagonals.
4- D and E are mid-points of BC and AD respectively. If area of Δ ABC=10 cm^2, find area of Δ EBD.
5- O is any point on the diagonal PR of parallelogram PQRS. Prove that ar Δ PSO = ar Δ PQO.

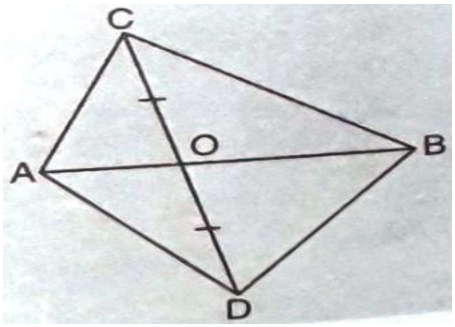


Three mark questions-

1- E,F,G,H are respectively the mid-points of the sides AB, BC, CD and DA of a parallelogram ABCD. Show that the quadrilateral EFGH is a parallelogram and that its area is half the area of the parallelogram ABCD.
2- In the given figure, ABCD is a parallelogram, P is any point on AB produced, AQ is drawn parallel to CP to intersect CB produced at Q and parallelogram BQRP is complete. Show that arABCD = arBQRP.



3- In figure ABC and ABD are two triangles on the same base AB. If line-segment CD is bisected by AB at O, show that ar Δ ABC = ar Δ ABD.

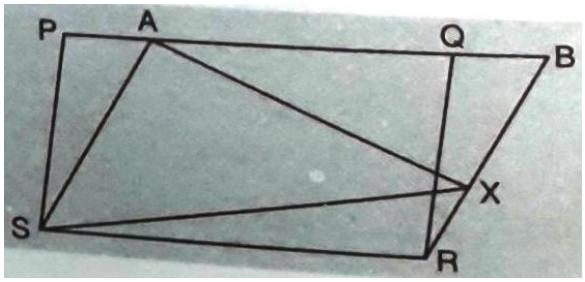


4- In a triangle ABC, E is the mid-point of median AD. Show that ar Δ BED = ¼ ar Δ ABC.

5- In figure, PQRS and ABRS are parallelograms and X is any point on side BR. Show that

(i) ar PQRS = ar ABRS

(ii) ar AXS = ½ ar PQRS.

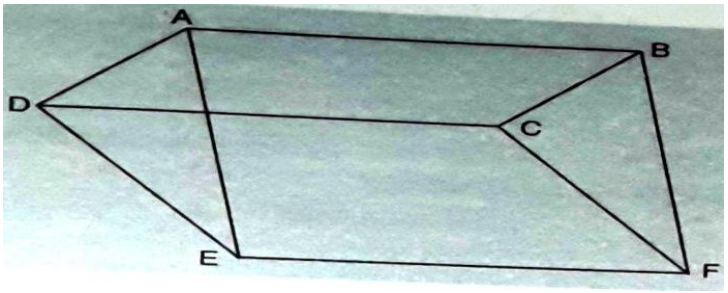


Four mark questions-

1- Prove that parallelograms on the same base and between the same parallel lines are equal in area.

2- Show that triangles on the same base and between the same parallel lines are equal in area.

3- In figure ABCD, DCFE and ABFE are parallelograms. Show that ar Δ ADE = ar Δ BCF.



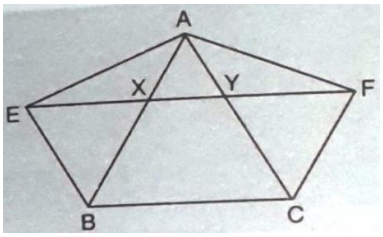
4- D,E and F are respectively the mid-points of the sides BC, CA and AB of a Δ ABC. Show that

(i) BDEF is a parallelogram

(ii) ar DEF = ¼ ar ABC

(iii) ar BDEF = ½ ar ABC.

5- XY is a line parallel to side BC of Δ ABC. BE II AC and CF II AB meet XY in E and F respectively. Show that ar Δ ABE = ar Δ ACF.



Statistics

One mark questions-

1- What is called the difference between the upper and lower class limit.

2- Find the range of the two digit number.

3- If the mean of data x, x+1, x+3, x+6 is 15/2 find the value of x.

4- Find the median of the data:
78,56,22,34,45,54,39,68,84,54.

5- What is the mode of the data given below:
16,8,12,16,10,11,11,16,9,10.

Two mark questions-

1- If the mean of 10, 12,18,11,p and 19 is 15, find the value of p.

2- Ten observations 6,14,15,17, x+1, 2x-13, 30,32,34,43 are written in ascending order. The median of the data is 24, find the value of x.

3- The mean of ten numbers is 55, if one number is excluded, their mean becomes 50, find the excluded number.

4- The pass% of students of class 9^{th} of a school for five consecutive is shown below:

Years	2004	2005	2006	2007	2008
Pass %	70	62	76	85	58

Draw a bar graph to represent the above data.

5- Heights of some students of a class are given below:
144,145,147,148,148,150,152,155,160
Find the median height of the students.

Three mark questions-

1- 30 children were asked about the number of hours they watched TV programs in the previous week:

1	6	2	3	5	12	5	8	4	8
10	3	4	12	2	8	15	1	17	6
3	2	8	5	9	6	8	7	14	12

(i) Make a groped frequency distribution table for this data taking class width 5 and one of the class intervals as 5-10.

(ii) How many children watched television for 15 or more hours a week.

2- Obtain the mean of the following of the following data:

Variable (x_i)	4	6	8	10	12
Frequency (f_i)	4	8	14	11	3

3- If the mean of the following data is 20.2 find the value of p,

x	10	15	20	25	30
F	6	8	p	10	6

4- The weight of 10 students of a class are given below:
41,39,48,52,35,28,30,35,46,32
Find the mean and median for this data.

Four mark questions-

1- The following table gives the life times of 400 neon lamps:

Life time (in hours)	Number of lamps
300-400	14
400-500	56
500-600	60
600-700	86
700-800	74
800-900	62
900-1000	48

(i) Represent the given information with the help of histogram.

(ii) How many lamps have a life time of more than 700 hours?

2- In a city, the weekly observations made in a study on the cost of living index are given in the following table:

Cost of living index	Number of weeks
140-150	5
150-160	10
160-170	20
170-180	9
180-190	6
190-200	2
Total	52

Draw a frequency polygon for the data above (without constructing a histogram).

3- Three coins were tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows:

0	1	2	2	1	2	3	1	3	0
1	3	1	1	2	2	0	1	2	1
3	0	0	1	1	2	3	2	2	0

Prepare a frequency distribution table for the data given above.

4- Consider the marks, out of 100, obtained by 51 students of a class in a test:

Marks	Number of students
0-10	5
10-20	10
20-30	4
30-40	6
40-50	7
50-60	3
60-70	2
70-80	2
80-90	3
90-100	9
Total	51

Draw a frequency polygon corresponding to this frequency distribution table.

5-

(i) Find the mean salary of 60 workers of a factory from the following table:

Salary (in rupees)	Number of workers
3000	16
4000	12
5000	10
6000	8
7000	6
8000	4
9000	3
10000	1
Total	60

(ii) The following observations have arranged in ascending order. If the median of the data is 63, find the value of x.

29, 32, 48, 50, x, x+2, 72, 78, 84, 95.