HOTS

1. AB and CD are parallel sides of trapezium ABCD. Diagonals AC and BD intersect at O. prove that ar(ΔAOD) = ar(ΔBOC). (4)
2. If D is the mid .point of side of side BC of a ΔABC, P and Q are two points lying respectively on the sides AB and BC such that DP is parallel to QA. Prove that ar(ΔCQP) = 1/2 ar(ΔABC). (4)
3. A rectangle is formed by joining the mid-points of the sides of a rhombus. Show that the area of rectangle is half the area of rhombus. (4)
4. In a parallelogram ABCD, AE is perpendicular to DC and CF is perpendicular to AD. If AB = 10 cm, AE = 6 cm and CF = 8 cm, then find AD. (1)
5. The adjacent sides of a rectangle are 16 cm and 8 cm. Find the area of the rectangle. (1)
6. PQRS is a square. T and U are the mid-points of sides PS and QR respectively. Find the area of ΔOTS, if PQ= 8 cm, where O is the point of intersection of TU and OS. (3)
7. If two sides of one triangle are equal to two sides of another triangle and the contained angles are supplementary, show that the two sides are equal in area. (4)
8. In a trapezium ABCD where AB is parallel to CD, E is the mid-point of BC, prove that ΔAED = 1/2 trapezium ABCD. (4)
9. The area of triangle ABC is 15 cm sq. If ΔABC and a parallelogram ABPD are on the same base and between the same parallel lines then what is the area of parallelogram ABPD. (4)
10. The area of parallelogram PQRS is 88 cm sq. A perpendicular from S is drawn to intersect PQ at M. If SM = 8 cm, then find the length of PQ. (4)

BASIC

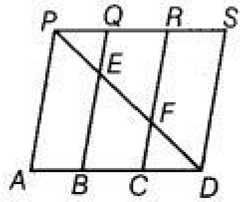
1. In triangle ABC, AD is a median. If the area of ΔABD is 15 cm sq. then find the ar(ΔABC). (1)
2. ABCD is a parallelogram and BPC is a triangle with P falling on AD. If the area of parallelogram ABCD= 26 cm^2, find the area of triangle BPC. (2)
3. PQRS is a parallelogram and PQT is a triangle with T falling on RS. If area of triangle PQT = 18 cm^2, then find the area of parallelogram PQRS. (2)
4. ABCD is a parallelogram where E is a point on AD. Area of ΔBCE = 21 cm^2. If CD = 6 cm, then find the length of AF. (3)
5. The area of ΔABC = 32 cm^2. AD is a median and E is the mid-point of AD. Find the area of ΔBED. (3)
6. ABCD is a parallelogram and BC is produced to a point Q such that AD= CQ. If AQ intersects DC at P, show that area of ΔBPC= area of ΔDPQ. (3)
7. Area of triangle ABC=24cm^2. F, E and D are the midpoints of sides AB, AC, BC respectively. Find the area of triangle EFD and of parallelogram BDEF. (3)
8. Find the area of trapezium whose parallel sides 9cm and 5cm respectively and the distance between these sides is 8cm. (2)

STANDARD

Question 1:

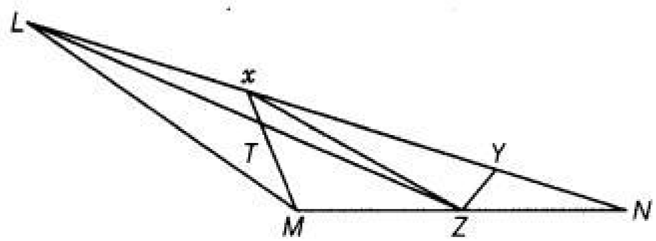
In the figure, PSDA is a parallelogram. Points Q and R are taken on PS such that PQ =

QR= RS and PA || QB || RC. Prove that ar (PQE) =ar (CFD). (4)



Question 2:

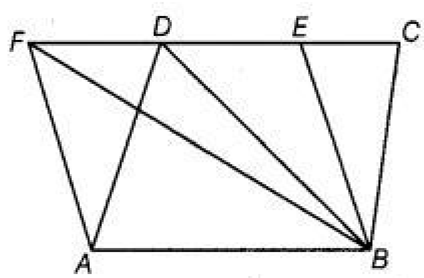
X and Y are points on the side LN of the triangle LMN such that LX = XY = YN. Through X, a line is drawn parallel to LM to meet MN at Z (see figure). Prove that ar (ΔLZY) = ar (MZYX). (4)



Question 3:

The area of the parallelogram ABCD is 90 cm^2. Find

1. ar (ABEF**)**
2. ar (ΔABD)
3. ar (ΔBEF)

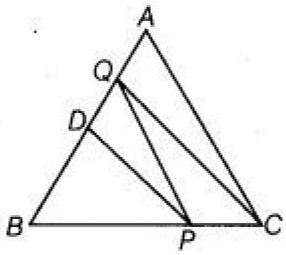


(3)

Question 4:

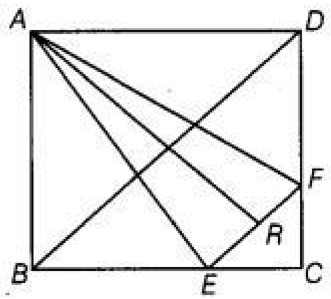
In ΔABC, D is the mid-point of AB and P is any point on BC. If CQ || PD meets AB in Q

(shown in figure), then prove that ar (ΔBPQ) = ½ ar (ΔABC). (4)



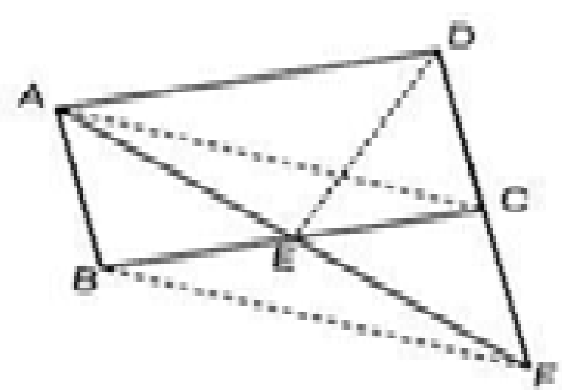
Question 5:

ABCD is a square. E and F are respectively the mid-points of BC and CD. If R is the mid-point of EF, prove that ar (ΔAER) = ar (ΔAFR). (4)



Question 6:

A point E is taken on the side BC of a parallelogram ABCD. AE and DC are produced to meet at F. Prove that ar (ΔADF) = ar (ΔBFC). (3)



Question 7:

The diagonals of a parallelogram ABCD intersect at a point O. Through O, a line is drawn to intersect AD at P and BC at Q. Show that PQ divides the parallelogram into two parts of equal area. (4)

Question 8:

ABCD is trapezium in which AB || DC, DC = 30 cm and AB = 50 cm. If X and Y are, respectively the mid-points of AD and BC, prove that ar (DCYX) = 7/9 ar (XYBA). (4)