



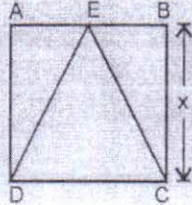
CLASS: IX

WORKSHEET

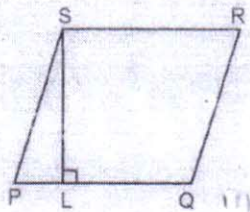


SUBJECT: MATH

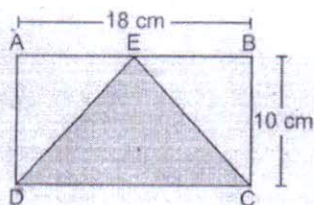
1. ABCD is a square of side x units. Find the area of $\triangle ECD$.



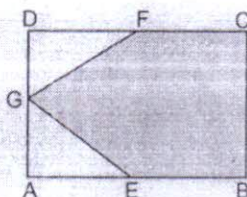
2. In the adjoining figure, PQRS is a parallelogram in which $SL \perp PQ$. If $PQ = 13$ cm and area of the parallelogram is 156 cm^2 , find SL.



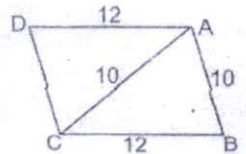
3. ABCD is a rectangle. Find the area of the unshaded region.



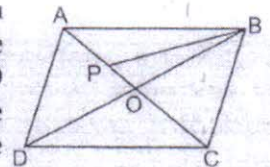
4. Calculate the area of the shaded region in the adjoining figure. ABCD is a rectangle having length 30 cm, breadth 20 cm. E, F and G are mid-points of AB, CD and AD respectively.



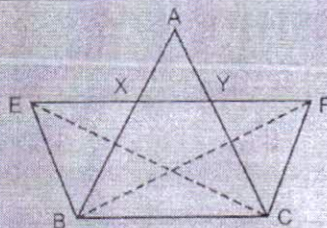
5. The perimeter of an isosceles triangle as given in figures is 32 cm and its base is 12 cm. Find the area of parallelogram.



6. ABCD is a parallelogram with area 80 sq. cm. The diagonals AC and BD intersect at O. P is the mid-point of OA. Calculate $\text{ar}(\triangle BOP)$.

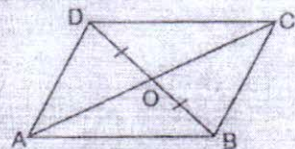


7. In the adjoining figure, XY is a line parallel to side BC of $\triangle ABC$, BE is drawn parallel to AC and CF is drawn parallel to AB meeting XY produced to E and F respectively. Prove that $ar(\triangle EBC) = ar(\triangle FBC)$.

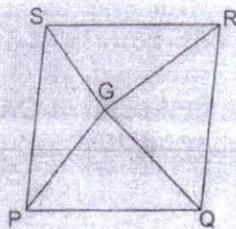


9. In the given figure, diagonals AC and BD of quadrilateral ABCD intersect at O such that $OB = OD$. If $AB = CD$, then show that:

- (i) $ar(\triangle DOC) = ar(\triangle AOB)$
- (ii) $ar(\triangle DCB) = ar(\triangle ACB)$.

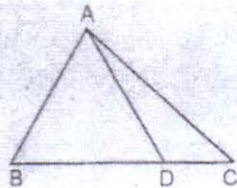


8. PQRS is a parallelogram. G is any point in the interior such that $ar(\triangle QGR) = 6 \text{ cm}^2$ and $ar(\triangle PGS) = 10 \text{ cm}^2$. Find area of PQRS.

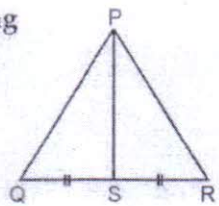




1. In $\triangle ABC$, if AD divides BC in the ratio $m:n$; then find the area of $\triangle ABD$: area of $\triangle ACD$.

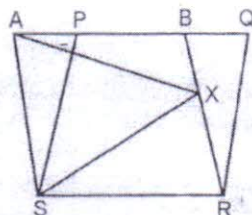


2. PS is median of the following triangle PQR . Find $ar(\triangle PQS) : ar(\triangle QRP)$.



3. If a triangle and a trapezium are equal in area, have bases in the same line and lie between the same parallels. If the base of the triangle is 18 inches, find the sum of the lengths of base and opposite side of the trapezium.

4. In the given figure, if $ABRS$ and $PQRS$ are parallelograms and X is any point on BR , then prove that $ar(PQRS) : ar(AXS) : ar(ABRS)$ is $2 : 1 : 2$.



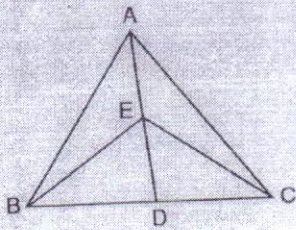
5. The sides AB and CD of a parallelogram $ABCD$ are produced to P and R respectively such that $AB = BP$ and $CB = BR$ and parallelogram $BPQR$ is completed. Prove that $ar(\parallel\text{gm } ABCD) = ar(\parallel\text{gm } BPQR)$.

6. A farmer has a field in the form of a parallelogram $PQRS$. She took any point A on RS and joined it to points P and Q . In how many parts the field is divided? What are the shapes of these parts? The farmer wants to sow wheat and pulses in equal portions of the field separately. How should she do it?

7. In a triangle ABC, E is the mid-point of median AD. Show that

$$ar(\triangle BED) = \frac{1}{4} ar(\triangle ABC).$$

In the given figure, E is any point on median AD of a $\triangle ABC$, show that $ar(\triangle ABE) = ar(\triangle ACE)$.



9. Show that the diagonals of a parallelogram divide it into four triangles of equal areas.

8. Show that area of a rhombus is half the product of its diagonals. (4)



1. To construct a ΔABC in which $AB + AC = 9$ cm and $\angle B = 30^\circ$, can you take BC equal to 4 cm?

2. Can you construct a right-angled triangle, whose base is 4 cm and sum of its hypotenuse and other side is 8 cm?

3. To construct a triangle ABC of which base BC , $\angle B$ and $AB + AC$ are given. Compare $AB + AC$ with BC . Give reasons for your answer.

4. To construct a triangle ABC when BC , $\angle B$ and $AB - AC$ are given, then explain $AB > AC$.

6. Construct an angle of 30° .

7. Construct a right triangle in which the hypotenuse measures 5 cm and the length of one of the sides containing the right angle is 4.2 cm.

