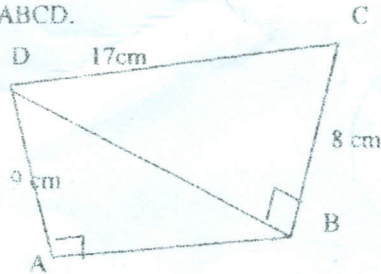
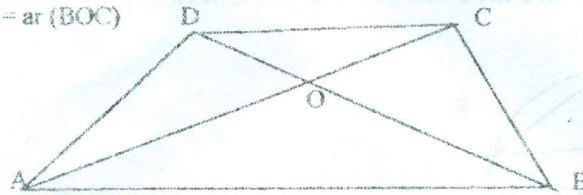


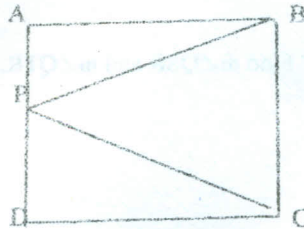
1. Calculate the area of quadrilateral ABCD.



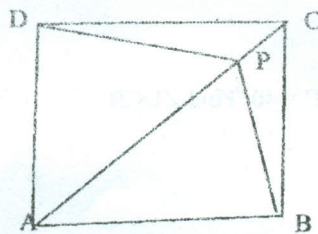
2. In the given figure ABCD is a trapezium in which  $AB \parallel DC$  and its diagonal AC and BD intersect at O. Prove that  $\text{ar}(\triangle AOD) = \text{ar}(\triangle BOC)$



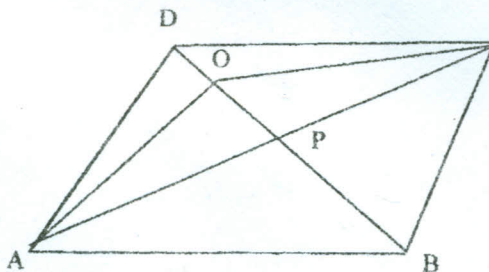
3. In the given figure ABCD is a parallelogram. If  $\text{ar}(\triangle ABP) = 10\text{cm}^2$  and  $\text{ar}(\triangle CPD) = 30\text{cm}^2$  then find  $\text{ar}(\text{parallelogram ABCD})$ .



4. ABCD is a parallelogram. If  $PC:PA=1:3$  and  $\text{ar}(\triangle BPC) = 16\text{cm}^2$  then find  $\text{ar}(\triangle ADP)$ .



5. In the given figure, O is any point on the diagonal BD of parallelogram ABCD. Prove that  $\text{Ar}(\triangle AOD) = \text{ar}(\triangle COD)$



6. AD is the median of  $\triangle ABC$ . If  $\text{ar}(\triangle ABD) = x\text{cm}^2$  and  $\text{ar}(\triangle ABC) = y\text{cm}^2$ , find the relation between x and y.
7. In  $\triangle ABC$ , D and E are two points that trisect base BC. Show that  $\text{ar}(\triangle ADE) = \frac{1}{3} \text{ar}(\triangle ABC)$
8. ABCD is a rhombus whose one angle is  $60^\circ$ . Prove that the ratio of the lengths of its diagonal is  $\sqrt{3}:1$ .
9. Prove that of all the parallelograms of which the sides are given rectangle has the greatest area.
10. Show that diagonal of a parallelogram divide it into 4 triangles of equal area.