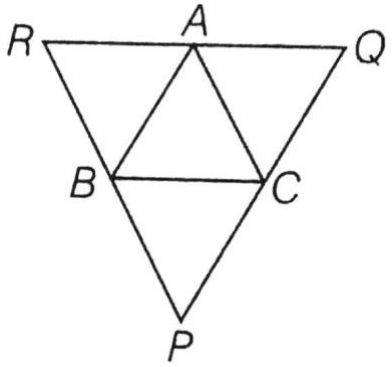
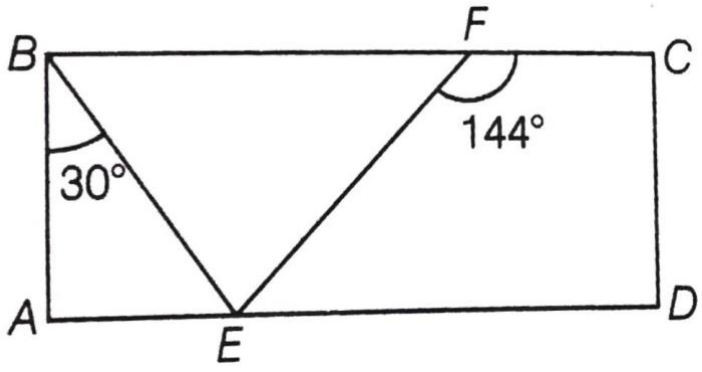
QUARDRILATERALS

1. The diagonals AC and BD of a parallelogram ABCD intersect each other at the point O. If Angle DAC =32^o and angle AOB =70^o then find angle DBC.
2. Through A, B and lines RQ, PR and QP have been drawn respectively, parallel to sides BC , CA and AB of a triangle ABC as shown in figure. Show that BC = QR/2



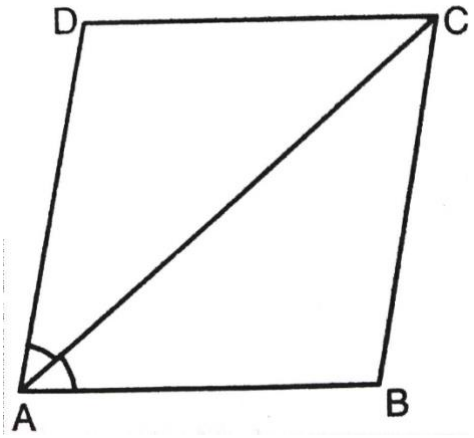
3.In the following figure, ABCD is a rectangle such that angle CFE = 144^o and angle ABE = 30^o. Find the measure of Angle BEF.



4.Diagonal AC of a parallelogram ABCD bisects angle A. Show that :

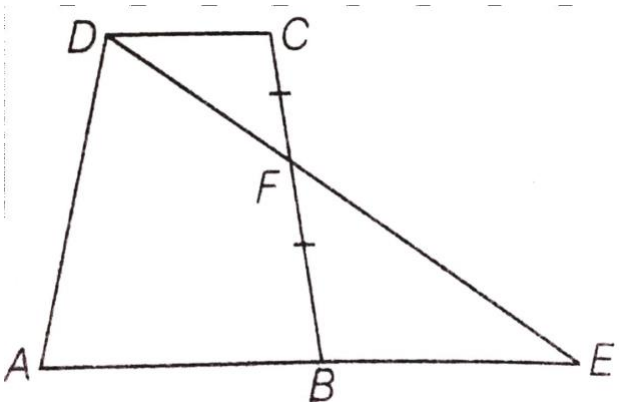
(i) it bisects angle C

(ii) ABCD is a rhombus.



5.In a parallelogram, show that the angle bisectors of two adjacent angles intersect at right angles.

6.In the figure, ABCD is a trapezium with AB I l DC. F is the mid-point of BC. DF and AB are produced to meet at E. Show that F is also the mid-point of DE.



7. D, E and F are respectively the mid-points of the sides AB, BC and CA, respectively of a triangle ABC. Prove that by

joining these mid-points D, E and F, the triangle ABC is divided into four congruent triangles.

8. If ABCD is a quadrilateral in which AB I l CD and AD = BC, then prove that angle A = angle B.
9. E is the mid-point of median AD of A ABC and BE is produced to meet AC at F. Show that AF = $\frac{1}{3}$ AC

10. ABC is triangle. D is a point on AB such that AD = $\frac{1}{4}$ AB and E is a point on AC such that AE = $\frac{1}{4}$ AC. Prove that DE = $\frac{1}{4}$BC.