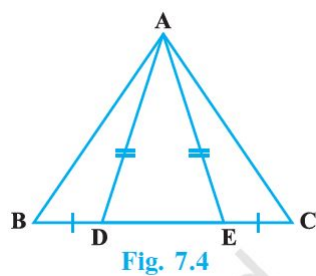


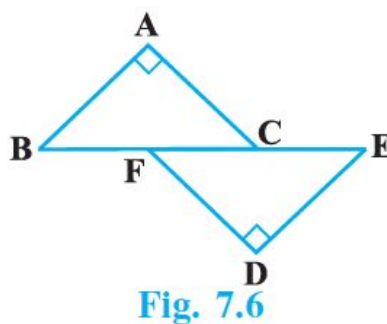
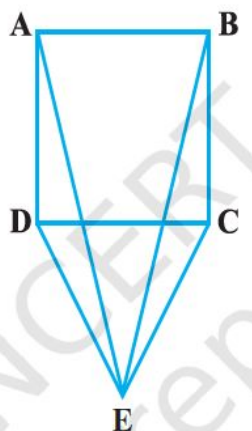
CHAPTER 7: TRIANGLES

EXERCISE 7.3

1. ABC is an isosceles triangle with $AB = AC$ and BD and CE are its two medians. Show that $BD = CE$.
2. In Fig.7.4, D and E are the points on side BC of a $\triangle ABC$ such that $BD = CE$ and $AD = AE$. Show that $\triangle ABD \cong \triangle ACE$.



3. CDE is an equilateral triangle formed on a side CD of a square $ABCD$ (Fig.7.5). Show that $\triangle ADE \cong \triangle BCE$.



4. In Fig.7.6, $BA \perp AC$, $DE \perp DF$ such that $BA = DE$ and $BF = EC$. Show that $\triangle ABC \cong \triangle DEF$.
5. Q is a point on the side SR of $\triangle PSR$ such that $PQ = PR$. Prove that $PS > PQ$.

6. S is any point on side QR of a $\triangle PQR$. Show that $PQ + QR + RP > 2PS$.
7. D is any point on side AC of a $\triangle ABC$ with $AB = AC$. Show that $CD < BD$.
8. In Fig.7.7, $l \parallel m$ and M is the mid-point of a line segment AB . Show that M is also the mid-point of any line segment CD , having its end points on l and m , respectively.
9. Bisectors of the $\angle B$ and $\angle C$ of an isosceles triangle with $AB = AC$ intersect each other at O . BO is produced to a point M . Prove that $\angle MOC = \angle ABC$.

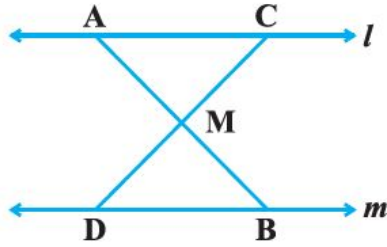


Fig. 7.7

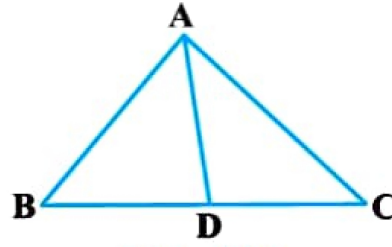


Fig. 7.8

10. Bisectors of the $\angle B$ and $\angle C$ of an isosceles triangle ABC with $AB = AC$ intersect each other at O . Show that the external angle adjacent to $\angle ABC$ is equal to $\angle BOC$.
11. In Fig.7.8, AD is the bisector of $\angle BAC$. Prove that $AB > BD$.