EXERCISE 7.3
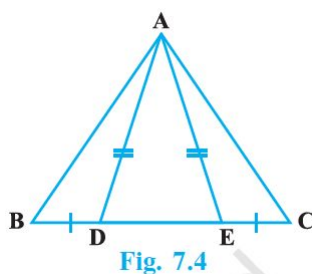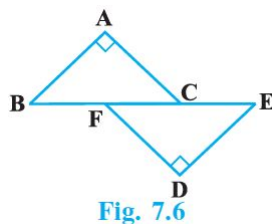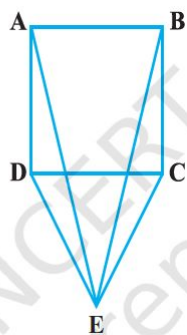
1. ABC is an isosceles triangle with AB=AC and BD and CE are its two medians. Show that BD=CE.

2. In Fig.7.4, D and E are the points on side BC of a △ABC such that BD=CE and AD=AE. Show that △ABD≅△ACE.

Fig. 7.4

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

Fig. 7.5

Fig. 7.6

4. In Fig.7.6, BA ⊥ AC, DE⊥DF such that BA=DE and BF=EC. Show that △ABC≅△DEF.

5. Q is a point on the side SR of △PSR such that PQ=PR. Prove that PS>PQ.

6. S is any point on side QR of a △PQR. Show that PQ+QR+RP>2PS.

7. D is any point on side AC of a △ABC with AB=AC. Show that CD<BD.

8. In Fig.7.7, l∥m an 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 angles B and C of an isosceles triangle with AB=AC intersect each other at O. BO is produced to a point M. Prove that ∠MOC=∠ABC.

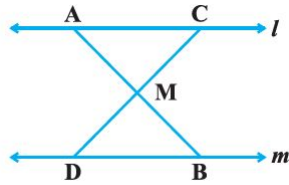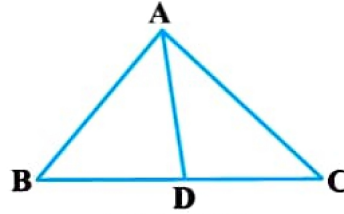
Fig. 7.7

Fig. 7.8

10. Bisectors of the angle B and C of an isosceles triangle ABC with AB=AC intersect each other at O. Show that the external angle adjacent to ∠ABC is equal to ∠BOC.

11. In Fig.7.8, AD is the bisector of ∠BAC. Prove that AB>BD.