



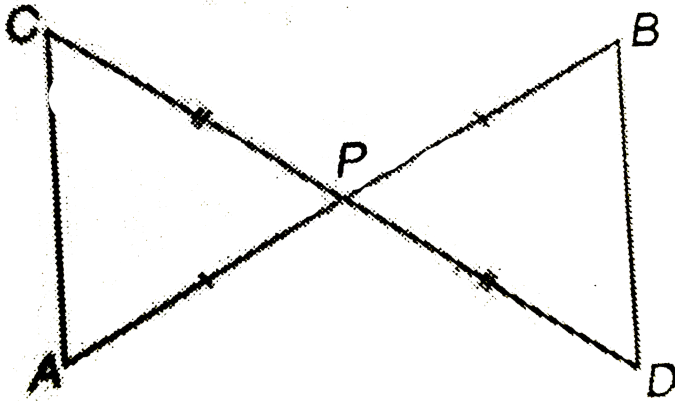
# MATHS

## BOOKS - NAGEEN MATHS (HINGLISH)

### TRIANGLES

**Solved Examples**

1. In the given figure, prove that  $AC = BD$ .

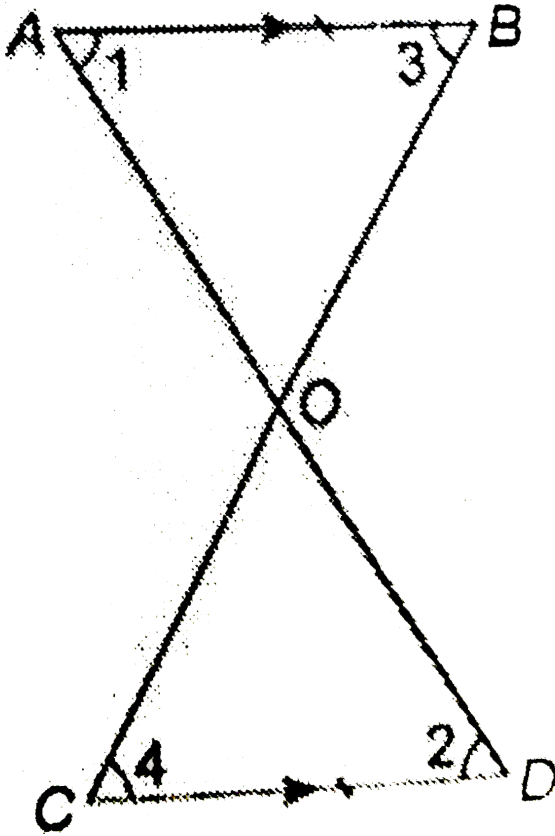


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2. In the adjoining figure,  $AB = CD$  and  $AB \parallel CD$  prove that

(i)  $\triangle AOB \cong \triangle DOC$

(ii) AD and BC bisect each other at the point O.



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3. The sides  $AB$  and  $BC$  and the median  $AD$  of triangle  $ABC$  are equal to the sides  $PQ$  and  $QR$  and the median  $PM$  of triangle  $PQR$  respectively. Prove that the triangles  $ABC$  and  $PQR$  are congruent.



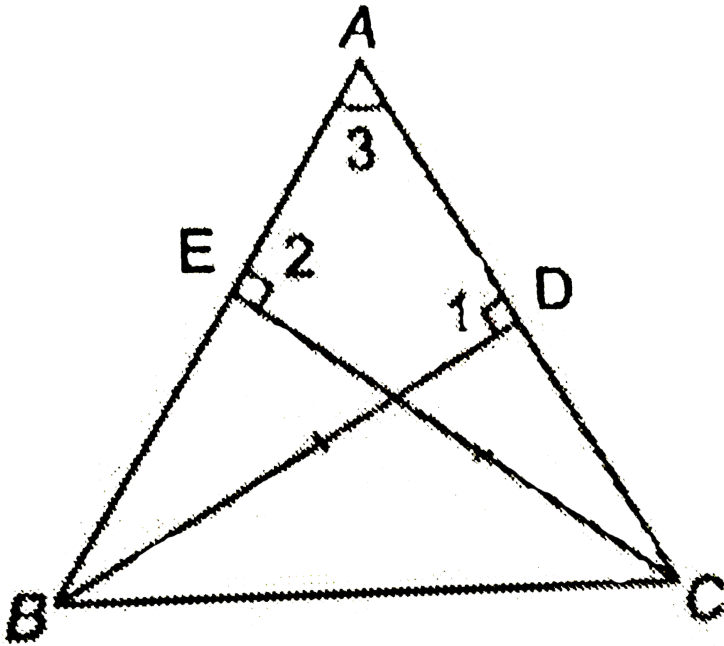
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4. In the adjoining figure,  $BD = CE$  and  $\angle ADB = \angle AEC = 90^\circ$ , prove that

(i)  $\triangle ABD \cong \triangle ACE$  (ii)  $ABC$  is an isosceles



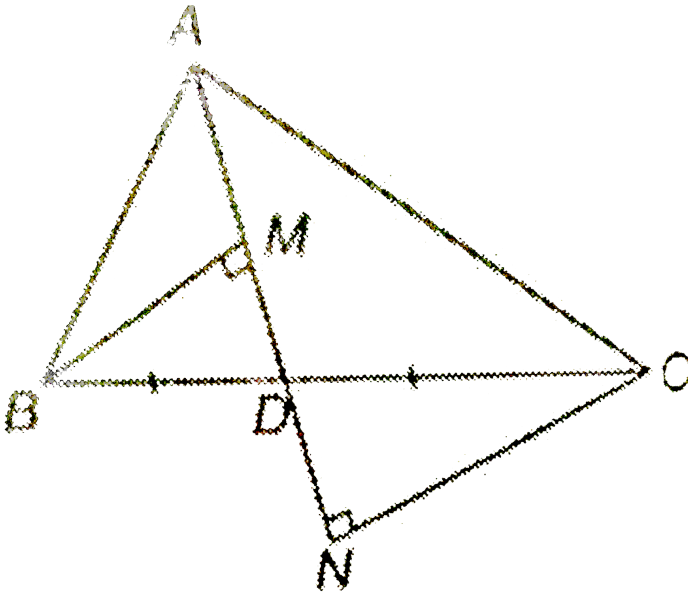
triangle.



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5. In the adjoining figure, D is the mid-point of BC. If BM and CN are perpendiculars from B and C respectively on AD and AD produced, then prove

that  $BM = CN$ .



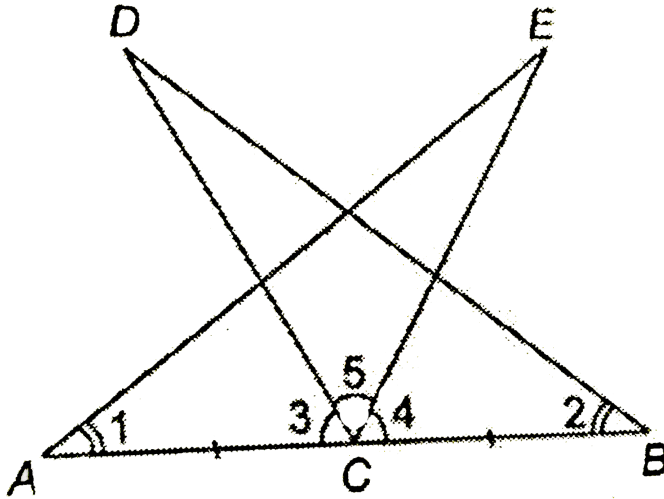
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6. Use the information marked to prove :

(i)  $\triangle EAC \cong \triangle DBC$  (ii)  $EC = DC$

Also state the Euclid's axiom used in proving the

congruency of two triangles.



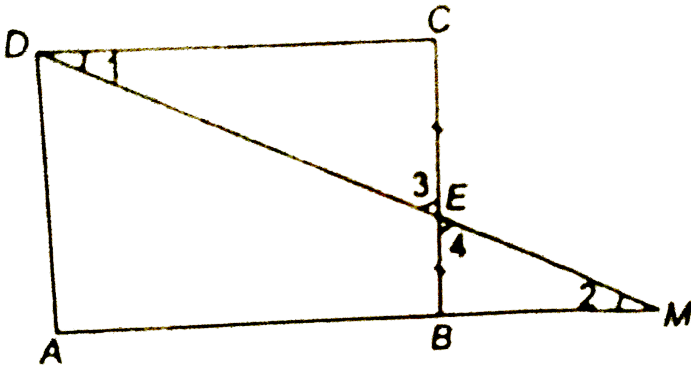
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7. In the adjoining figure ABCD is a parallelogram, ABM is a line segment and E is the mid-point of BC.

Prove that :

(i)  $\triangle DCE \cong \triangle MBE$  (ii)  $AB = BM$

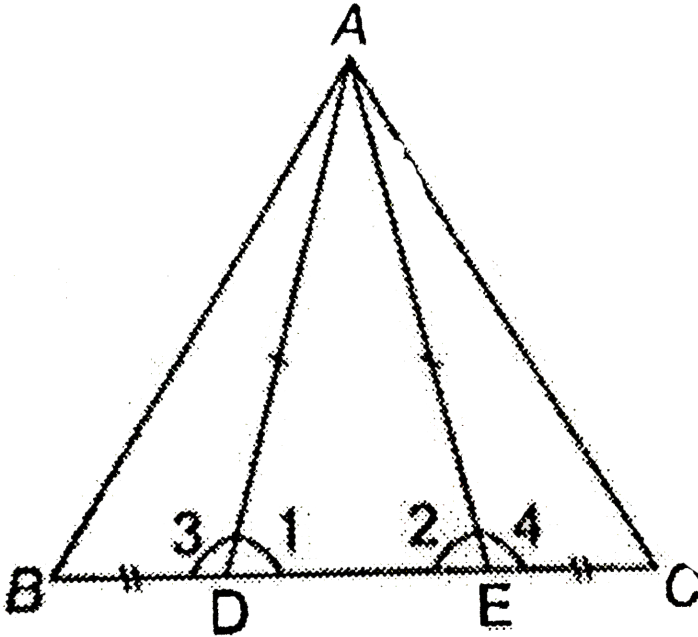
(iii)  $AM = 2DC$



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8. In the given figure, D and E are the points on the base BC of  $\triangle ABC$  such that  $BD = CE$ ,  $AD = AE$  and  $\angle ADE = \angle AED$ ,

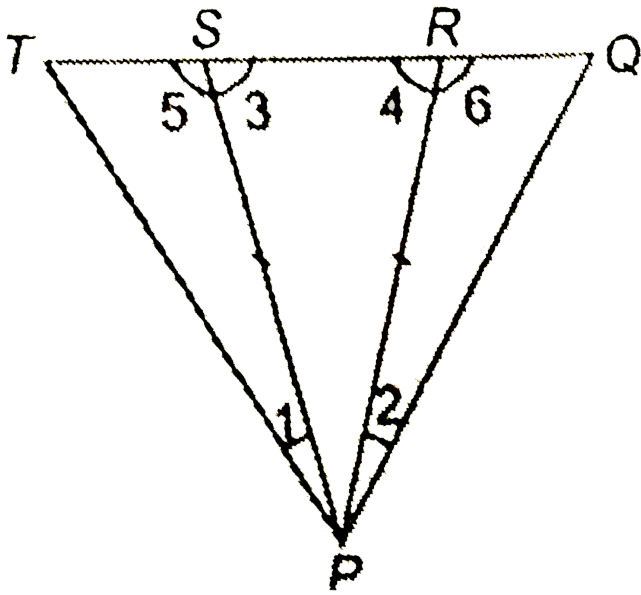
prove that  $\triangle ADB \cong \triangle AEC$ .



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9. In the given figure,  $PS = PR$ ,  $\angle TPS = \angle QPR$ .

Prove that  $PT = PQ$ .

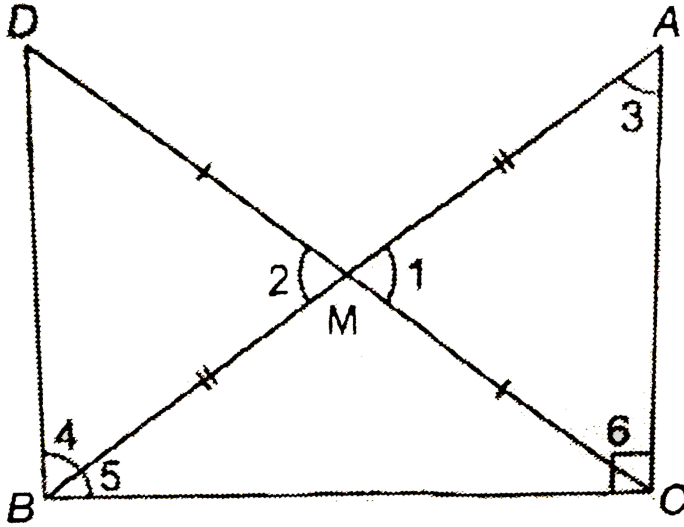


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10. In right triangle ABC, right angle at C, M is the mid-point of the hypotenuse AB. C is joined to M and produced to a point D such that  $DM = CM$ . Point D is joined to point B. Show that

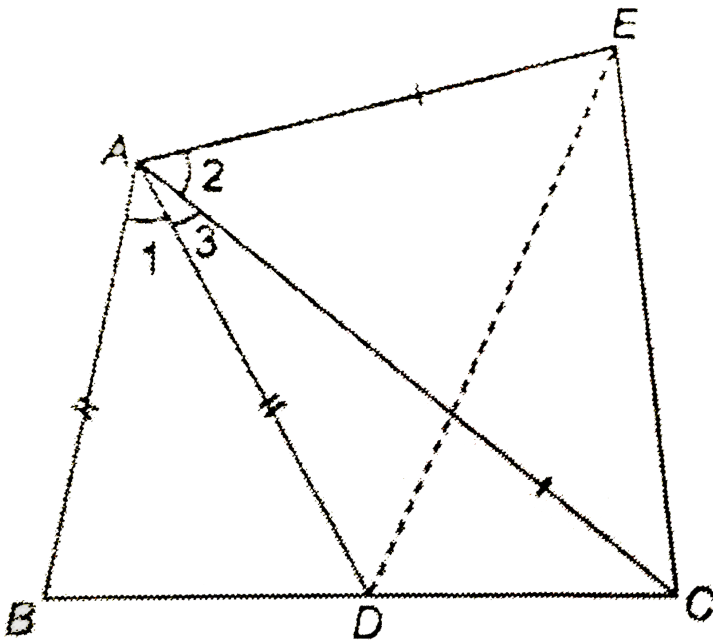
(i)  $\triangle AMC \cong \triangle BMD$  (ii)  $\angle DBC = \angle ACB$

(iii)  $\triangle DBC \cong \triangle ACB$  (iv)  $CM = \frac{1}{2}AB$



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11. In the given figure,  $AC = AE$ ,  $AB = AD$  and  $\angle BAD = \angle EAC$ . Prove that  $BC = DE$ .



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12. If the bisector of the vertical angle of a triangle bisects the base of the triangle. then the triangle is isosceles. GIVEN : A  $ABC$  in which  $AD$  is the bisector of  $\angle A$  meeting  $BC$  in  $D$  such that



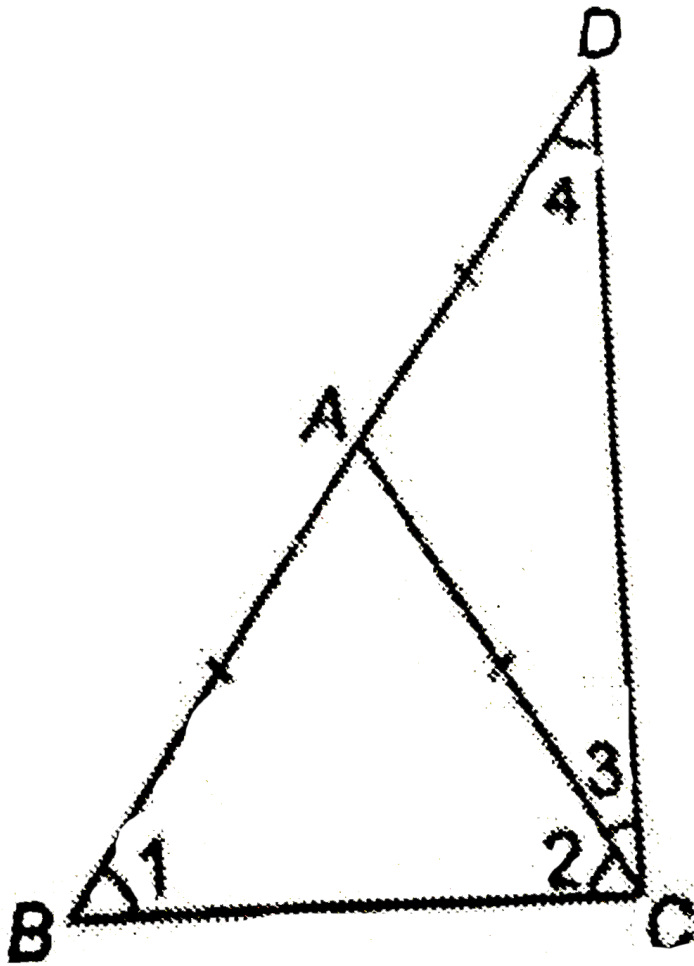
$BD = DC$ . TO PROVE :  $ABC$  is an isosceles triangle.



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13.  $\triangle ABC$  is an isosceles triangle with  $AB = AC$ , side BA is produced to  $D$  such that  $AB = AD$ .

Prove that  $\angle BCD$  is a right angle.



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**14.** If  $\triangle ABC$  is an isosceles triangle with  $AB = AC$ .

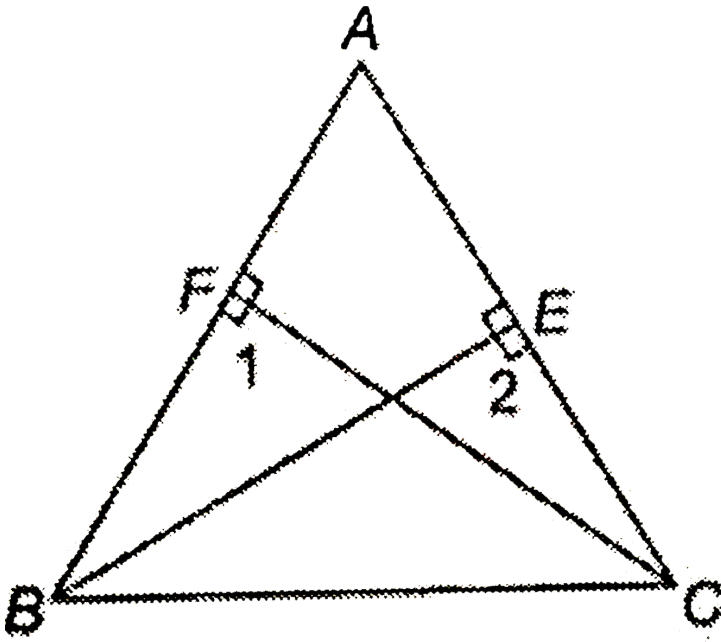
Prove that the perpendiculars from the vertices B and C to their opposite sides are equal.



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**15.** BE and CF are two equal altitudes of a triangle ABC. Using RHS congruence rule, prove that the

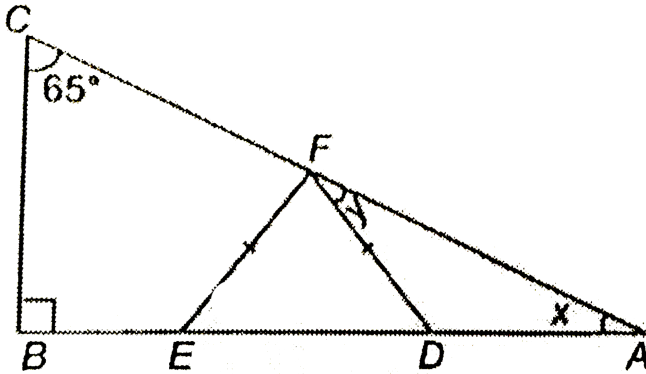
triangle ABC is isosceles.



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16. In the adjoining figure, find the measure of angle  $FEB$ , if the lengths of sides  $AD$ ,  $DF$  and  $FE$  are equal

and  $\angle ACB = 65^\circ$ .



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17.  $ABC$  is a triangle in which  $\angle B = 2 \angle C$   $D$  is a point on  $BC$  such that  $AD$  bisects  $\angle BAC$  and  $AB = CD$ . Prove that  $\angle BAC = 72^\circ$ .

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18. In  $\triangle ABC$ ,  $\angle A = 100^\circ$ ,  $\angle C = 30^\circ$ . Find (i) largest side, (ii) smallest side of  $\triangle ABC$ .

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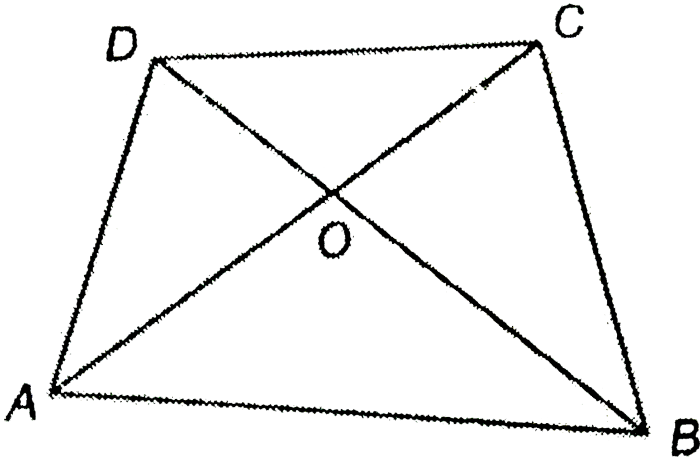
19. In  $\triangle ABC$ ,  $D$  is any point on side  $BC$ . Prove that  $AB + BC + CA > 2AD$

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20. In the adjoining figure,  $ABCD$  is a quadrilateral. Its diagonals  $AC$  and  $BD$  intersect at point 'O'. Prove that :

(a)  $AB + BC + CD + DA < 2(AC + BD)$

(b)  $AB + BC + CD + DA > (AC + BD)$



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21. Show that the difference of any two sides in a triangle is smaller than the third side.

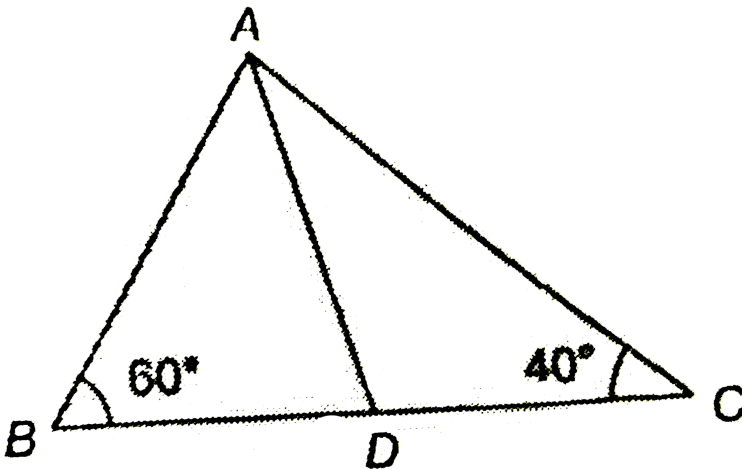


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22. In  $\triangle ABC$ ,  $BC = CA$  and  $\angle A = 40^\circ$ . Find the largest side of  $\triangle ABD$ .

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23. In  $\triangle ABC$ ,  $AD$  is the bisector of  $\angle A$ . Write  $AB$ ,  $BD$  and  $DC$  in descending order of their length.



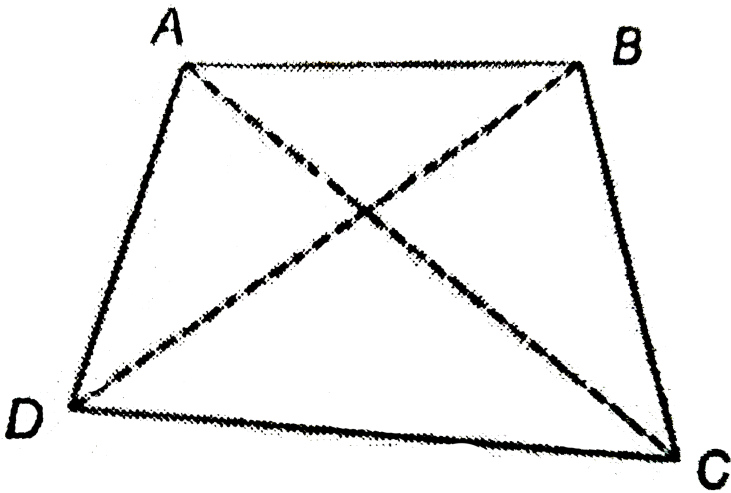




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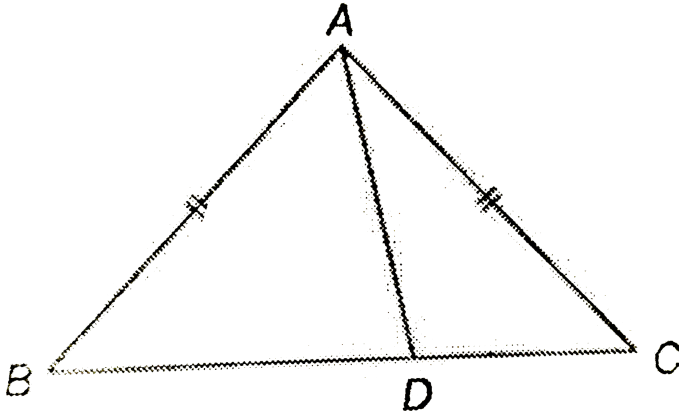
24. In  $\square ABCD$ ,  $AB$  is the smallest and  $CD$  is the largest side. Prove that :

(i)  $\angle B > \angle D$  (ii)  $\angle A > \angle C$



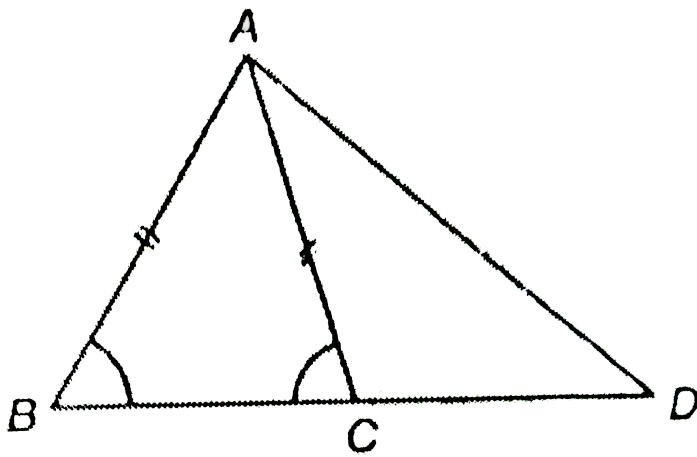
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25. If D any point on the BC of an isosceles triangle ABC then prove that  $AB > AD$  and  $AC > AD$ .



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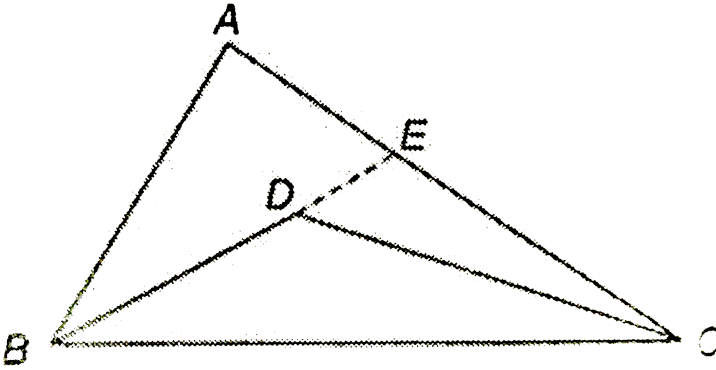
26. In isosceles triangle ABC, D is a point on the base BC produced. Prove that  $AD > AB$ .



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27. In the adjoining figure,  $ABC$  is a triangle and  $D$  is any point in its interior. Show that

$$BD + DC < AB + AC.$$



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**28.** Prove that the perimeter of any triangle is greater than the sum of three altitudes.

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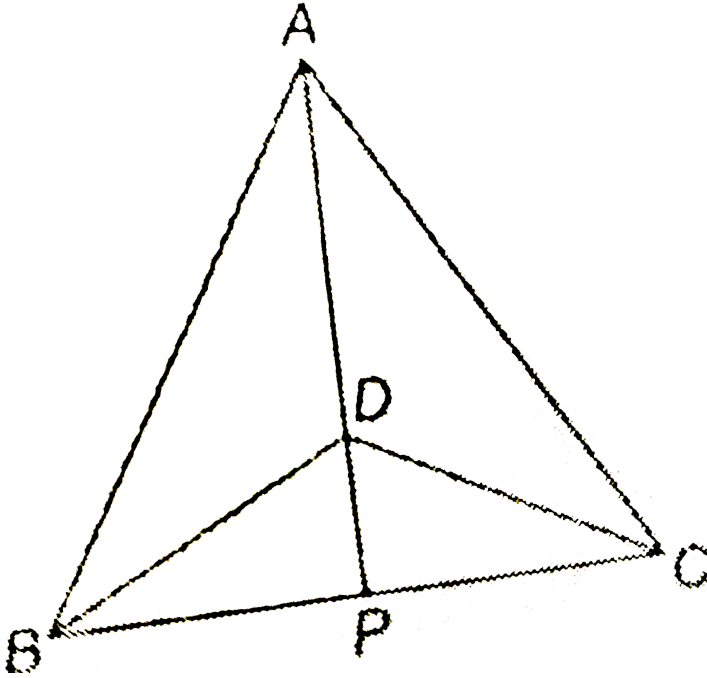
**29.**  $\triangle ABC$  and  $\triangle DBC$  are two isosceles triangles on the same base BC and vertices A and D are on the same side of BC (see figure). If AD is extended to intersect BC at P, show that :

(i)  $\triangle ABD \cong \triangle ACD$

(ii)  $\triangle ABP \cong \triangle ACP$

(iii) AP bisects  $\angle A$  as well as  $\angle D$

(iv) AP is the perpendicular bisector of BC.



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30. In figure,  $\angle B < \angle A$  and  $\angle C < \angle D$ . Show that  $AD < BC$ .

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**31.**  $S$  is any point on side  $QR$  of a  $\triangle PQR$ . Show that  $PQ + QR + RP > 2PS$ .



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**32.** Bisector of the angles  $B$  and  $C$  of an isosceles triangle  $ABC$  with  $AB = AC$  intersect each other at  $O$ . Show that external angle adjacent to  $\angle ABC$  is equal to  $\angle BOC$ .



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**33.** Prove that sum of any two sides of a triangle is greater than twice the median with respect to the third side.

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**34.** Show that in a quadrilateral  $ABCD$ ,  $AB + BC + CD + DA < 2(BD + AC)$ .

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Problems From Ncert Exemplar



1. If 3 sides of a triangle are  $35\text{cm}$  ,  $16\text{cm}$  and  $12\text{cm}$  ,  
then which type of triangle is this ?

A. Isosceles

B. Equilateral

C. Scalene

D. Not possible

**Answer: D**



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2. If 3 sides of a triangle are of lengths 12 cm, 8 cm and 17 cm. then which type of triangle is this ?



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3. If 3 sides of a triangle are of length 16 cm, 12 cm and 13 cm, then which type of triangle is this ?



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4. If 3 sides of a triangle are 63 cm, 16 cm, and 65 cm, then which type of triangle is this ?



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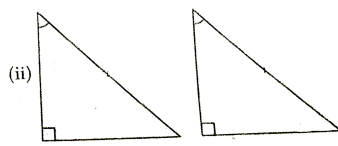
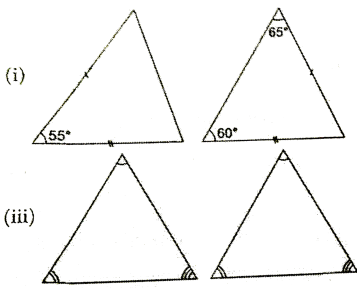
5. If 3 sides are of lengths 24 cm, 10 cm and 12 cm, then which type of triangle is this ?



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## Exercise 7 A

1. Which of the following pairs of triangles are congruent ? Also state the condition of congruency in each case :



(iv) In  $\triangle ABC$  and  $\triangle DEF$ ,  $AB = EF$ ,  $BC = DF$   
and  $\angle B = \angle F$

(v) In  $\triangle ABC$  and  $\triangle PQR$ ,  $AB = QR$ ,  $AC = PR$   
and  $\angle B = \angle R$

(vi) In  $\triangle ABC$  and  $\triangle PQR$ ,  $\angle A = \angle P$ ,  $AC = PR$   
and  $AB = PQ$

(vi) In  $\triangle ABC$  and  $\triangle PQR$ ,  $AB = QR$ ,  $\angle A = \angle Q$   
and  $AC = QP$ .



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2. In a  $\triangle ABC$ ,  $D$  is mid-point of  $BC$ ,  $AD$  is produced upto  $E$  so that  $DE = AD$ , prove that :

(i)  $\triangle ABD$  and  $\triangle ECD$  are congruent (ii)  $AB = EC$

(iii)  $AB$  is parallel to  $EC$ .

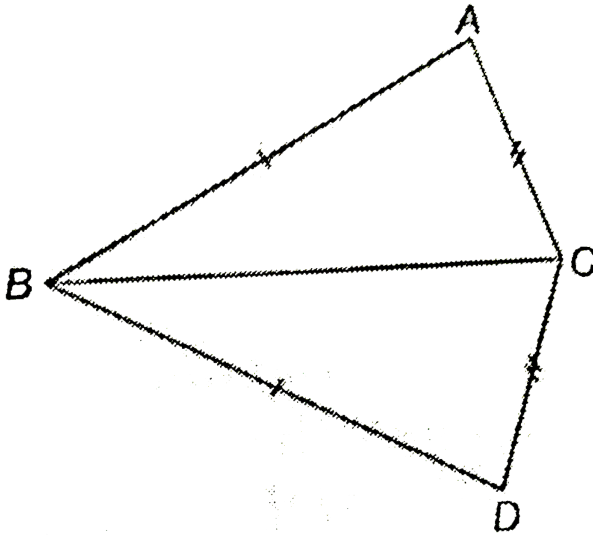


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3. In the given figure,  $AB = DB$  and  $AC = DC$ . If

$\angle ABD = 58^\circ$ ,  $\angle DBC = 2x - 4^\circ$ ,  $\angle ACB = y + 15^\circ$

and  $\angle DCB = 63^\circ$  find the values of  $x$  and  $y$ .



A.  $x = (16.5)^\circ, y = 49^\circ$

B.  $x = (17.5)^\circ, y = 48^\circ$

C.  $x = (16.5)^\circ, y = 48^\circ$

D.  $x = (13.5)^\circ, y = 48^\circ$

**Answer: C**



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4.  $BD$  is the bisector of angle  $ABC$ . From a point  $P$  in  $BD$ , perpendiculars  $PE$  and  $PF$  are drawn to  $AB$  and  $BC$  respectively, prove that :

(i) Triangle  $BEP$  is congruent to triangle  $BFP$  (ii)  $PE=PF$ .

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5. Given a  $\triangle ABD$  in which  $AB = AD$  and  $AC$  bisects  $BD$ . Prove that :

$\triangle ABC \cong \triangle ADC$ .

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6. In a triangle ABC,  $AB = AC$  and bisector of angle A meets BC at D. Prove that :

(i)  $\triangle ABD \cong \triangle ACD$  (ii)  $AD$  is perpendicular to BC.



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7. In quadrilateral ABCD,  $AB=DC$  and  $AD=BC$ . Prove that the sides AB and DC are parallel to each other.



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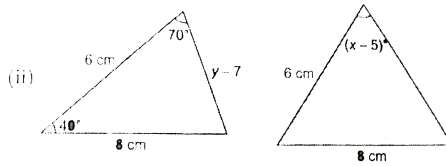
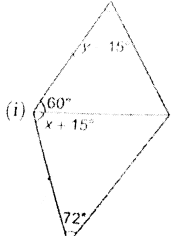
8. In  $\triangle ABC$ ,  $AB = AC$  and the bisectors of  $\angle B$  and  $\angle C$  meet  $AC$  and  $AB$  at point  $D$  and  $E$  respectively. Prove that  $BD = CE$ .

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9. In  $\triangle ABC$ ,  $\angle B = \angle C$ . Prove the perpendiculars from the mid-point of  $BC$  and  $AC$  are equal.

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10. Find the value of  $x$  and  $y$  in each of the following figures containing two congruent triangles :

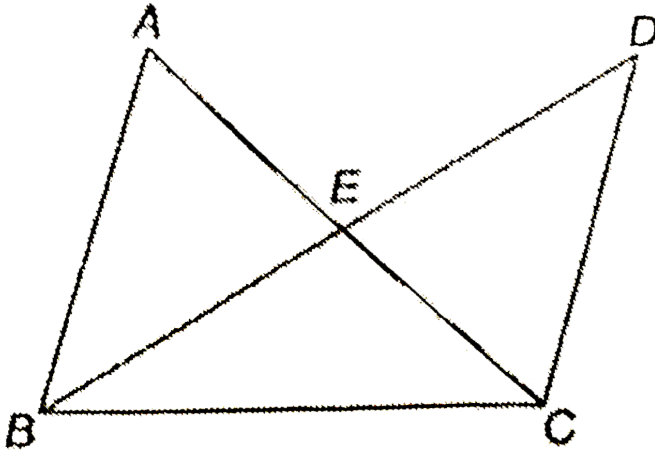


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11. In the adjoining figure,  $\angle BAC = \angle BDC$  and  $\angle ABC = \angle BCD$ . Prove that :

(i)  $\triangle ABC \cong \triangle DCB$

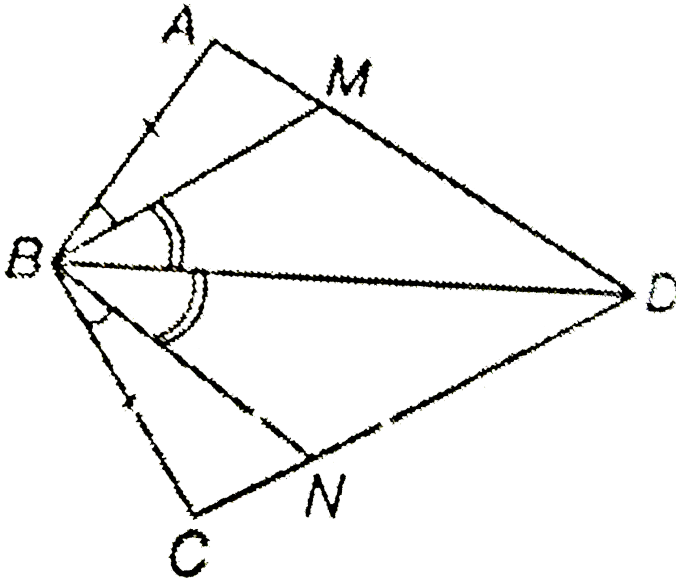
(ii)  $\triangle ABE \cong \triangle DCF$ .



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12. In the adjoining figure, ABCD is a quadrilateral. M and N are the points on AD and CD respectively such that  $AB = BC$ ,  $\angle ABM = \angle CBN$  and

$\angle MBD = \angle NBD$ . Prove that  $BM = BN$ .

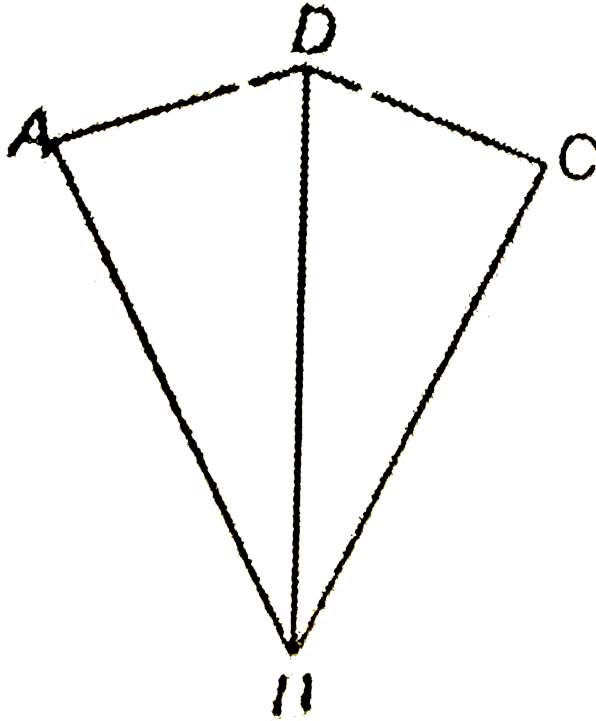


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13. Given  $AD = DC$  and  $DB$  bisects  $\angle ADC$ .

(i) Prove that,  $\triangle ADB \cong \triangle CDB$

(ii) If  $\angle ABD = 48^\circ$ , find  $\angle CBD$ .

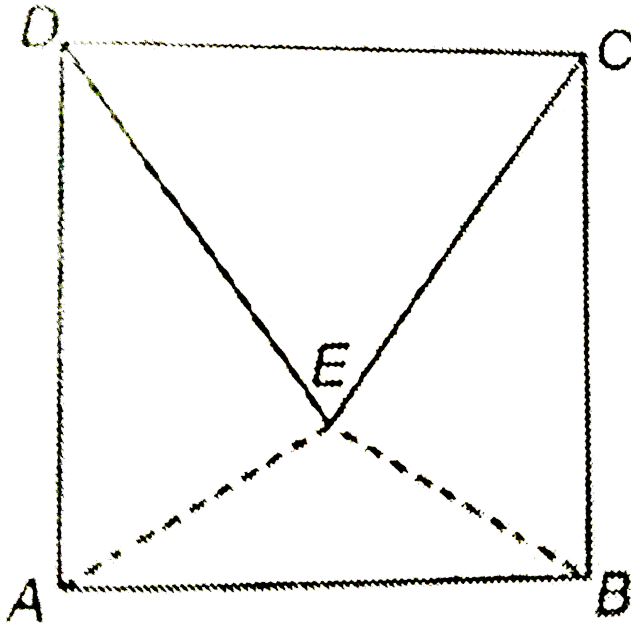


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**14.** The adjoining figure shows a square ABCD and an equilateral triangle DEC. Prove that :

(i)  $\angle ADE = \angle BCE = 30^\circ$

(ii)  $\triangle ADE \cong \triangle BCE$



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15. Equilateral triangles ABD and ACE are drawn on sides AB and AC respectively of a  $\triangle ABC$  outside it.

Prove that :

(i)  $\angle DAC = \angle EAB$  (ii)  $DC = BE$



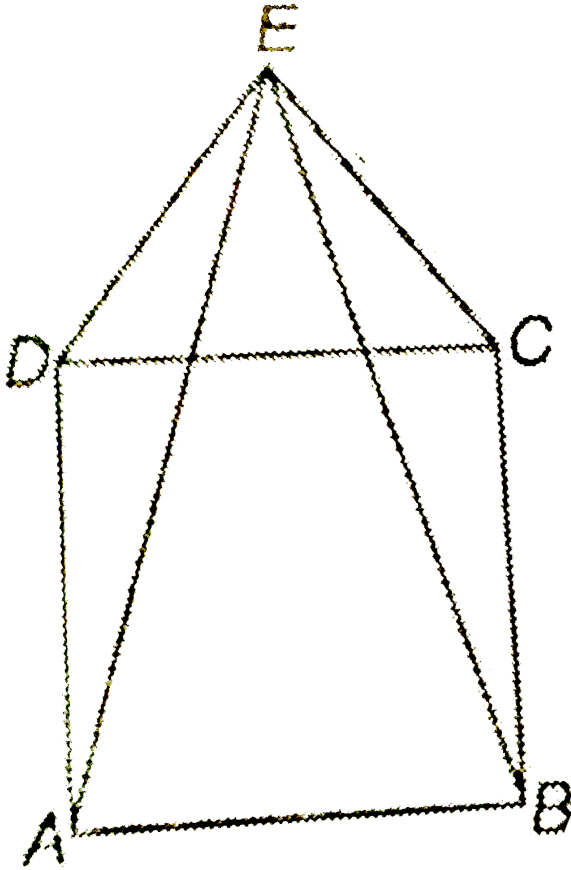
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**16.** The following figure shows a square ABCD and an equilateral triangle DCE. Prove that :

(i)  $\angle ADE = \angle BCE = 150^\circ$

(ii)  $\triangle ADE \cong \triangle BCE$

(iii)  $AE = BE$



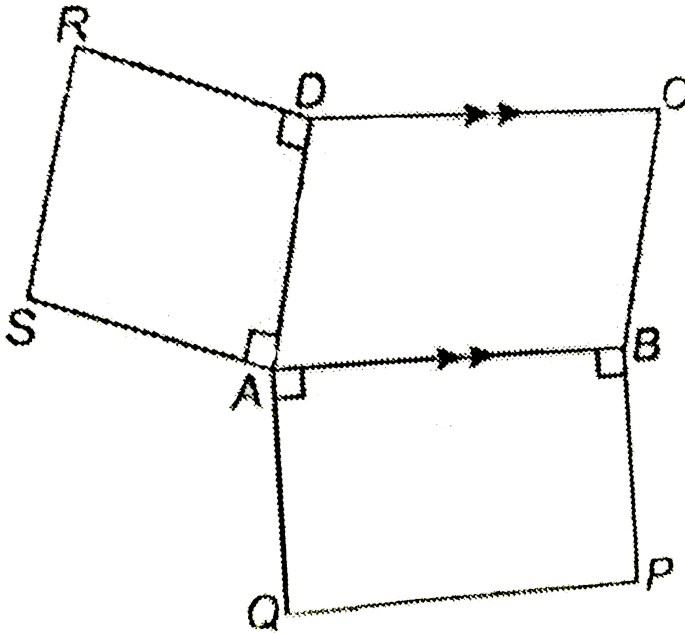
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17. The given figure shows a parallelogram ABCD. Squares ABPQ and ADRS are drawn on sides AB and AD respectively of the parallelogram ABCD. Prove that :

(i)  $\angle SAQ = \angle ABC$

(ii)  $SQ = AC$

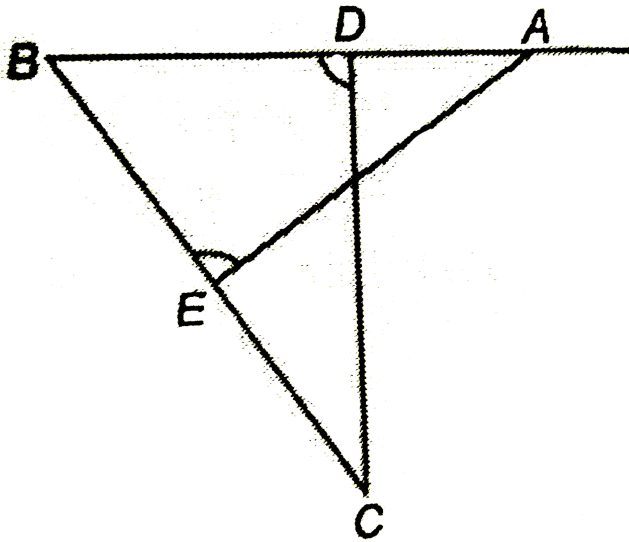


**18.** In a  $\triangle ABC$ ,  $BD$  is the median to the side  $AC$ ,  $BD$  is produced to  $E$  such that  $BD = DE$ . Prove that  $AE$  is parallel to  $BC$ .



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**19.** In the given figure,  $\angle BDC = \angle BEA$  and  $AB = BC$ . Show that  $AE = CD$ .

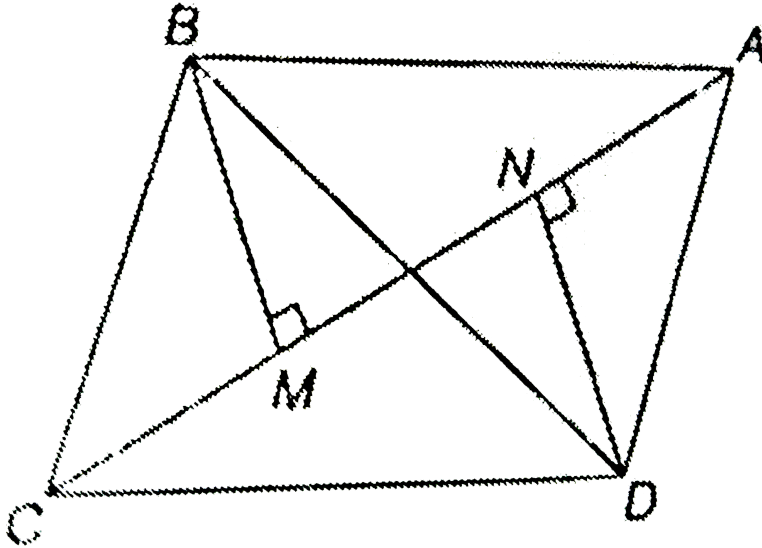


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20. If the diagonals of a quadrilateral bisect each other at right angle, prove that the quadrilateral is a rhombus.

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21. In the adjoining figure,  $BM$  and  $DN$  are the perpendiculars from  $B$  and  $D$  respectively to  $AC$  such that  $BM = DN$ . Prove that  $BO = OD$ .

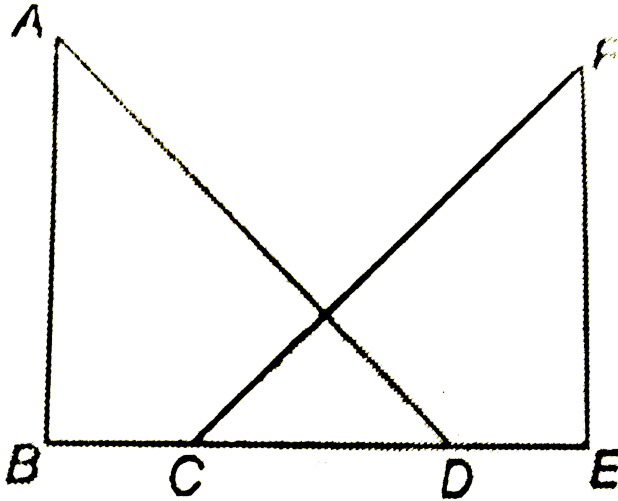


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22. In the adjoining figure,

$AB = EF$ ,  $BC = DE$ ,  $\angle ABC = \angle FED = 90^\circ$ ,

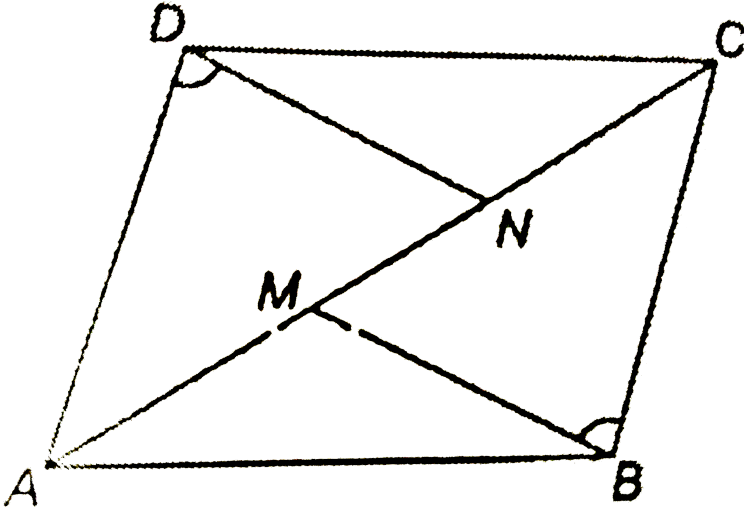
prove that  $AD = CF$ .



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23. In the adjoining figure, ABCD is a parallelogram. If

$\angle MBC = \angle NDA$ , prove that  $AM = NC$ .



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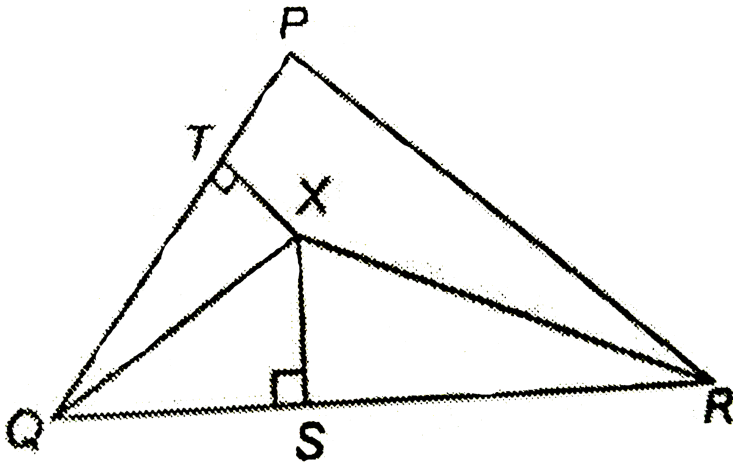
24. In the adjoining figure, QX and RX are the bisectors of the angles Q and R respectively of the

angles  $Q$  and  $R$  respectively of the triangle  $PQR$ . If

$XS \perp PQ$ . Prove that :

(i)  $\Delta XTQ \cong \Delta XSQ$

(ii)  $PX$  bisects angle  $P$ .



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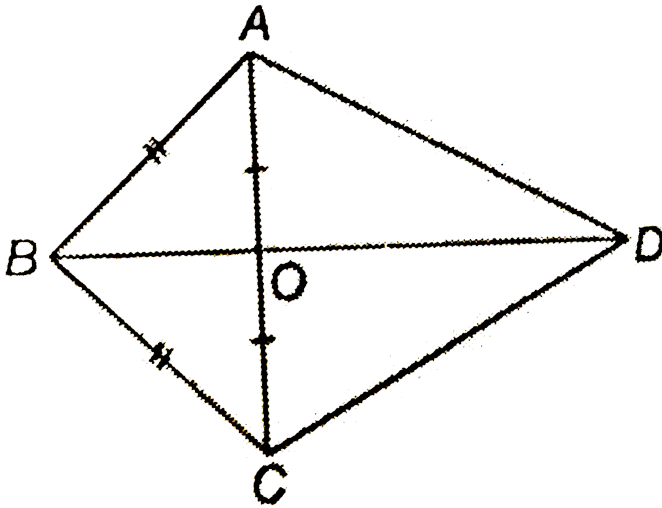
25. In the following figure,  $OA = OC$  and  $AB = BC$ .

Prove that :

(i)  $\angle APB = 90^\circ$

(ii)  $\triangle AOD \cong \triangle COD$

(iii)  $AD = CD$

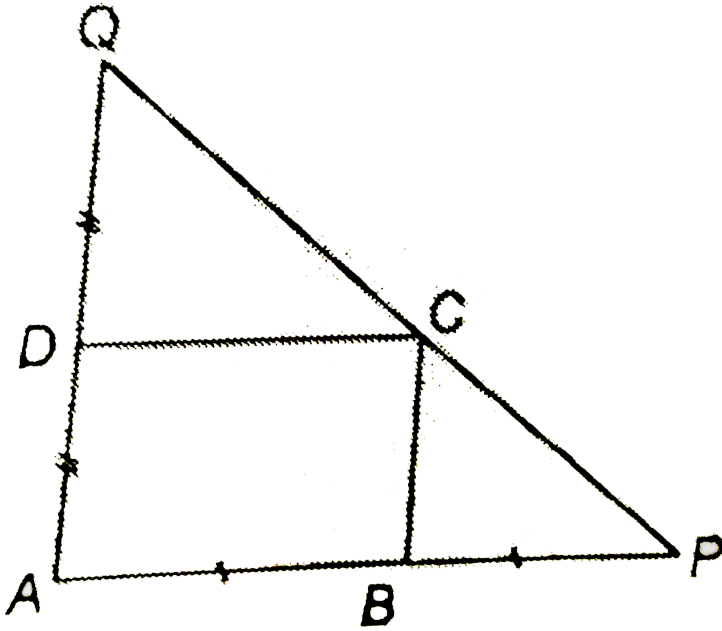


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26. In the adjoining figure, ABCD is a paralogram. The side AB is produced to P such that  $AB=BP$  and the

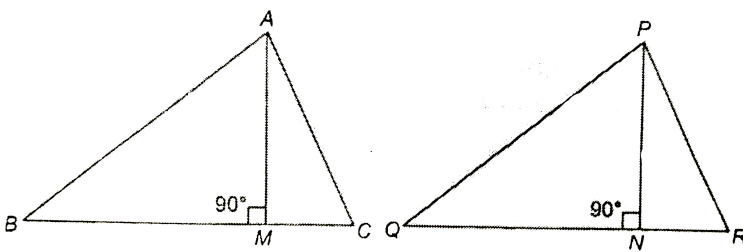


side AD is produced to Q such that  $AD = DQ$ . Prove that  $CP = CQ$ .



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27. In the following figures,  $AB = PQ$ ,  $AC = PR$  and  $AM = PN$ . Prove that  $\triangle ABC \cong \triangle PQR$ .



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**28.** Prove that the medians of an equilateral triangle are equal.

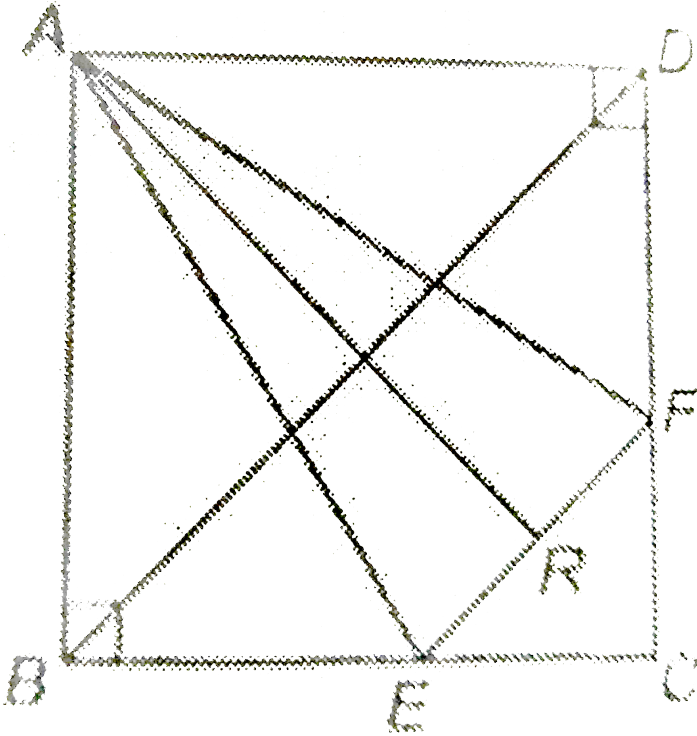
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**29.** ABCD is a square EF is parallel to BD. R is the midpoint of EF. Prove that :

(i)  $BE = DF$

(ii) AR bisects angle BAD

(iii) If AR produced it will pass through C.



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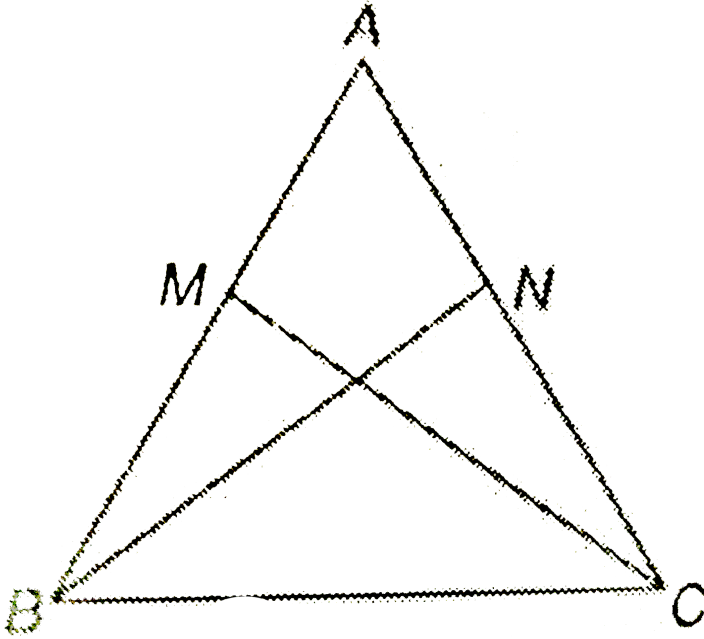
**30.** The following figure shows a triangle  $ABC$  in which  $AB = AC$ .  $M$  is a point on  $AB$  and  $N$  is a point on  $AC$  such that  $BM = CN$ . Prove that :

(i)  $AM = AN$

(ii)  $\triangle AMC \cong \triangle ANB$

(iii)  $BN = CM$

(iv)  $\triangle BMC \cong \triangle CNB$



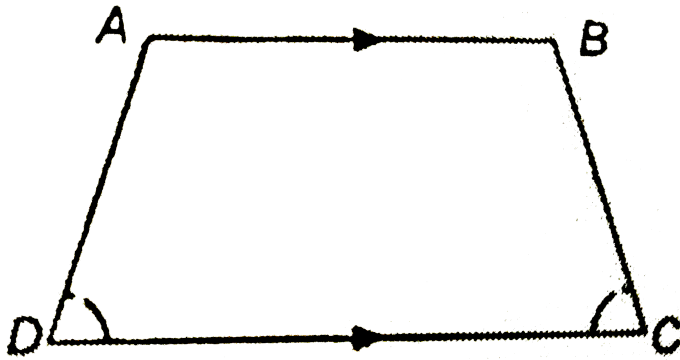
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31. In the given figure,  $AB \parallel DC$  and  $\angle D = \angle C$ .

Prove that :

(i)  $AD = BC$

(ii)  $AC = BD$



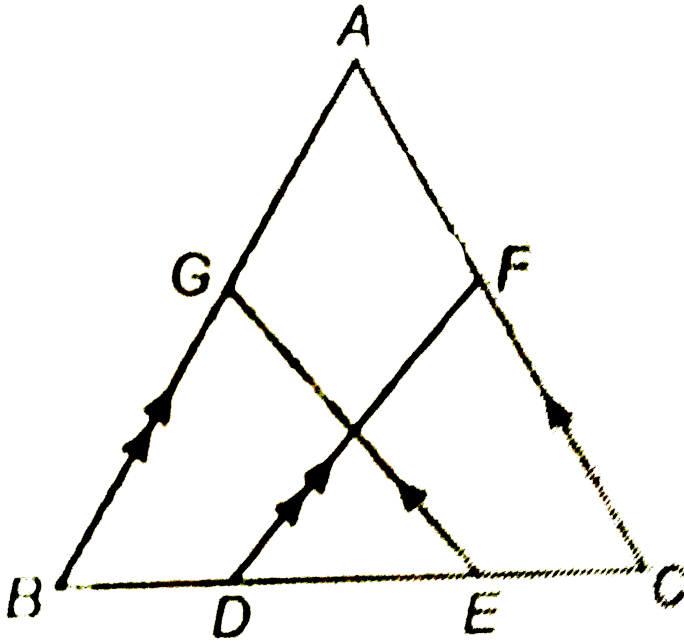
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32. In the following figure,  $AB \parallel FD$ ,  $AC \parallel GE$  and

$BD = CE$ . Prove that :

(i)  $BG = DF$

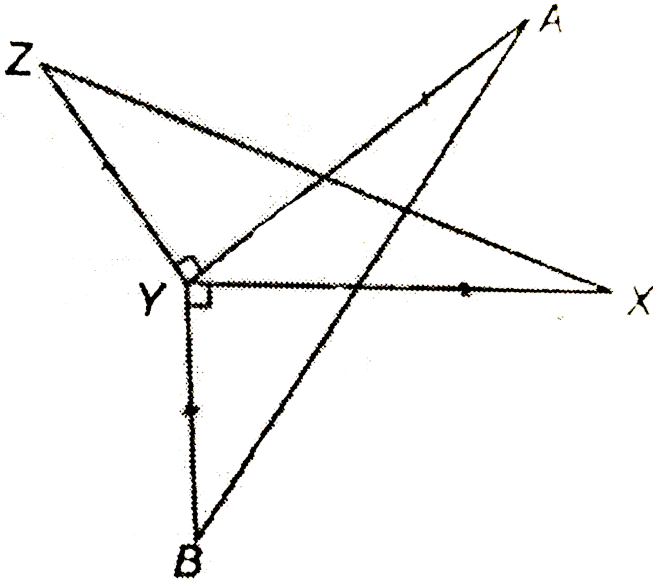
(ii)  $CF=EG$



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33. In the adjoining figure,  $\angle AYZ = \angle BYX = 90^\circ$ ,  $AY = YZ$  and

$XY = BY$ . Prove that  $AB = ZX$ .



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**34.** In the adjoining figure, ABCD is a square and PAB is an equilateral triangle. Find :

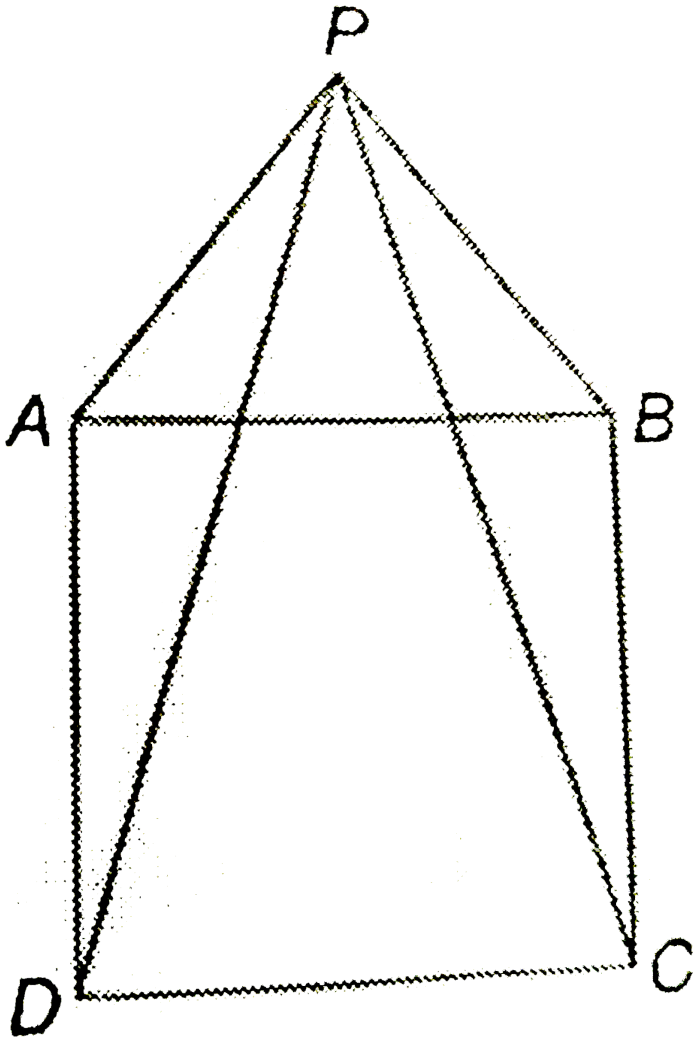
(i)  $\angle APD$

(ii)  $\angle PDC$



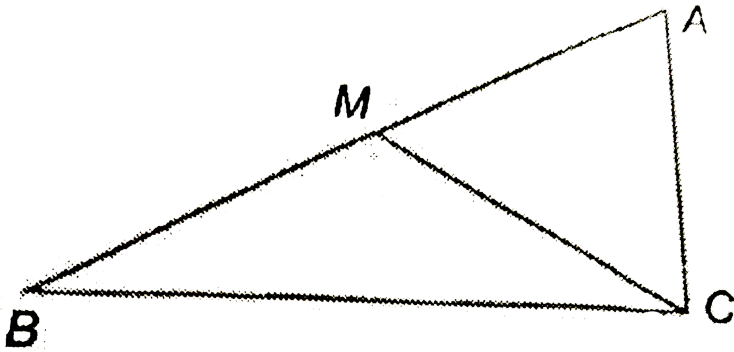
(iii)  $\angle DPC$

(iv) Prove that  $DP = CP$



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35. In the adjoining figure,  $\triangle ABC$  is right angled at C and M is the mid-point of hypotenuse AB, If AC = 32 cm and BC = 60 cm, then find the length of CM.



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Exercise 7 B

1. In  $\triangle ABC$ ,  $AB = 8$  cm,  $BC = 15$  cm and  $AC = 17$  cm. find the largest angle.

A.  $\angle A$

B.  $\angle C$

C.  $\angle B$

D. None of these

**Answer: C**



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2. In  $\triangle ABC$ ,  $\angle A = 50^\circ$ ,  $\angle B = 60^\circ$ . Find the largest side.

A. AB

B. AC

C. BC

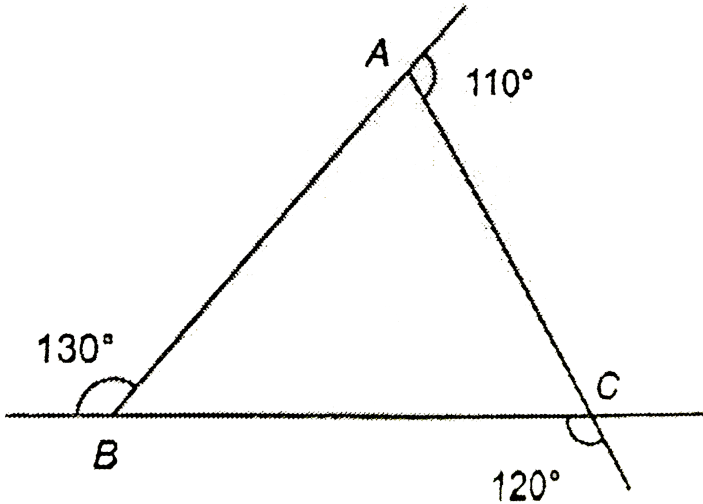
D. all are equal

**Answer: A**



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3. In the adjoining figure, write the sides of  $\triangle ABC$  in descending order of their length.



A. BC, AB, AC

B. BC, AC, AB

C. AB, AC, BC

D. none of these

Answer: A



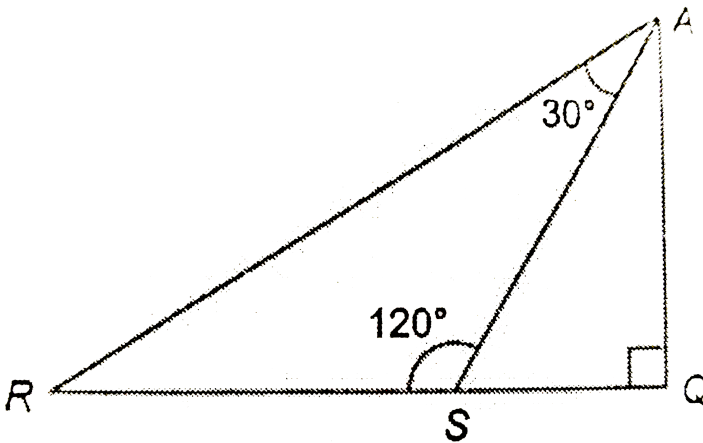
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4. In the adjoining figure, explain :

(i) which side is the greatest side ?

(ii) which of two sides are equal ?

(iii) which is the smallest side of  $\triangle AQS$  ?



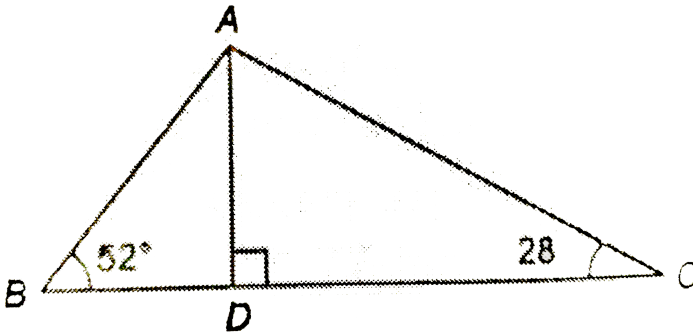
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5. In the adjoining figure,

(i) Which side is smallest ?

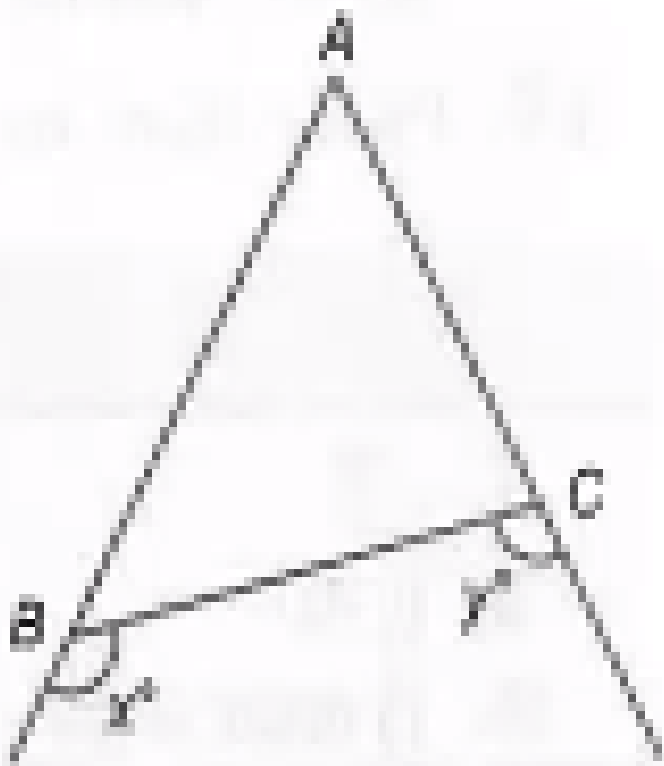
(ii) In  $\triangle ABC$ , what is the nature of  $\angle BAC$  ?



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6. In the adjoining figure,  $x > y$ , Prove that

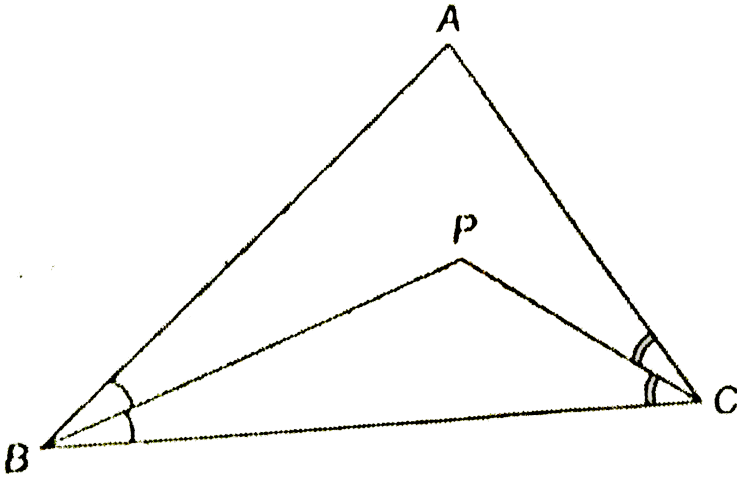
$AB > AC$



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7. In the adjoining figure,  $AB > AC$  and the angle bisectors of  $\angle B$  and  $\angle C$  meet at point P. Prove that  $PB > PC$ .

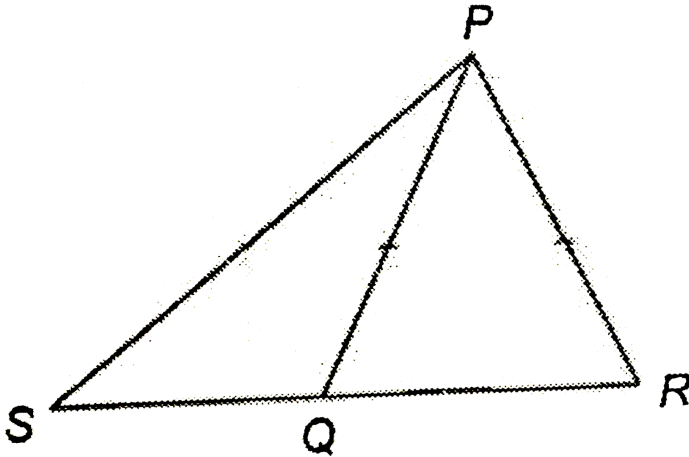


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8. Prove that the sum of any two sides of a triangle is greater than two times the median of third side.

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9. In the adjoining figure,  $PQ=PR$ . Show that  $PS > PQ$ .



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10. Prove that the sum of three altitudes drawn from the vertices to opposite sides of a triangle is less

than the sum of three sides.

or

Prove that the perimeter of a triangle is greater than the sum of three altitudes drawn from the vertices to opposite of a triangle.



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**11.** Prove that the sum of the sides of a quadrilateral is greater than twice of one of its diagonal.



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12. Prove that in a quadrilateral the sum of all the sides is greater than the sum of its diagonals.



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13. In  $\triangle ABC$ , if  $BC > AC > AB$  then :

(i) What is the relation  $\angle A$  and  $\angle C$  ?

(ii) What is the relation between the values of  $(AB + AC)$  and  $BC$  ?

(iii) What is the relation between the values of  $(AC - BC)$  and  $AB$  ?

(iv) What is the smallest angle in  $\triangle ABC$  ?

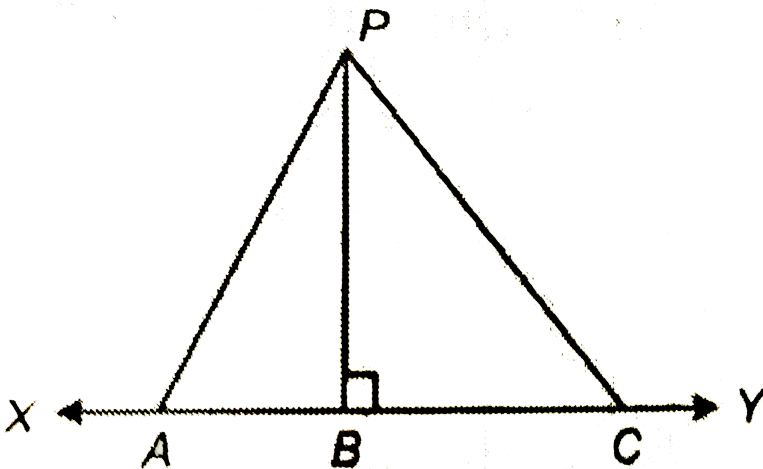


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14. In the adjoining figure, line segment  $PA$ ,  $PB$  and  $PC$  are drawn from point  $P$  to line  $XY$ . Here  $PB$  is perpendicular to  $XY$ .

(i) What is the nature of the angles formed by line segment  $PA$  and  $PC$  from  $XY$  ?

(ii) Which line segment is the smallest in the segment  $PA$ ,  $PB$  and  $PC$  ?





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15. Show that in a right angled triangle, the hypotenuse is the longest side.



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## Revision Exercise Very Short Answer Questions

1. In an isosceles  $\triangle ABC$  if  $\angle A = 90^\circ$  and  $AB = AC$ , find  $\angle B$  and  $\angle C$ .



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2. In a right triangle  $ABC$ ,  $\angle B = 90^\circ$  find the longest side.



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3. Can we construct a triangle  $ABC$  in which  $AB = 3$  cm,  $BC = 4$  cm and  $AC = 8$  cm ?



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4. Is it possible that a triangle has one obtuse and one right angle ?



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5. In  $\triangle XYZ$ ,  $\angle X = 45^\circ$ ,  $\angle Y = 75^\circ$  in another triangle  $ABC$ ,  $\angle A = 45^\circ$ ,  $\angle C = 60^\circ$  and  $AC = 6\text{cm}$ . find  $XZ$ , given that  $\triangle XYZ \cong \triangle ABC$ .

A. 5 cm

B. 6 cm

C. 7 cm

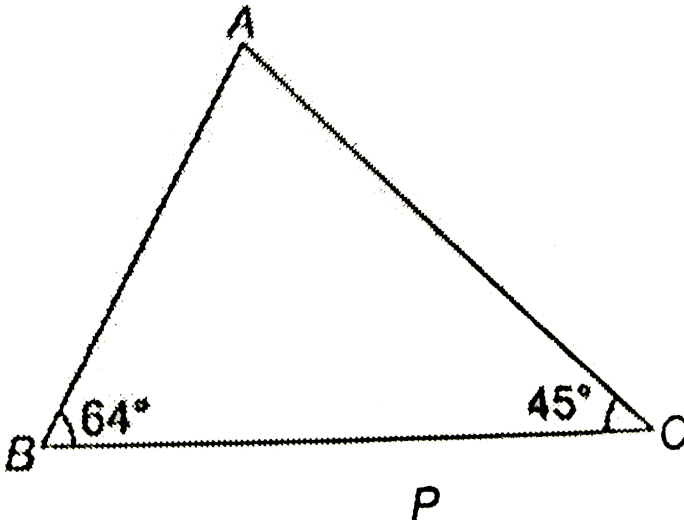
D. 8 cm

**Answer: B**





6. Find the greatest and the smallest side of  $\triangle ABC$  in the adjoining figure.



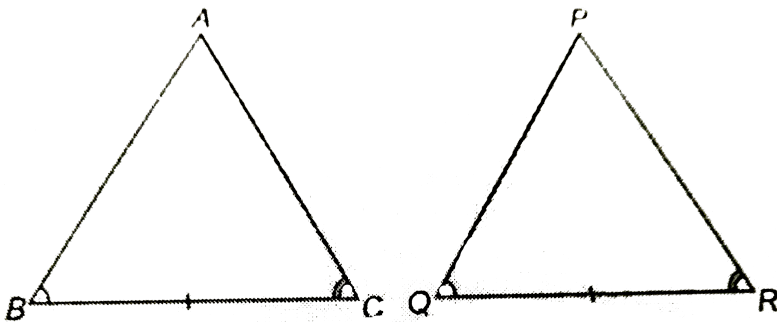
- A. greatest AC, smallest AB
- B. greatest BC, smallest AC
- C. greatest BC, smallest AB

D. none of these

Answer: C

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7. In the given figure whether  $\triangle ABC$  is congruent to  $\triangle PQR$ . Mention the condition for congruence.



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8. In  $\triangle ABC$ ,  $\angle A = \angle B = 30^\circ$  name the longest side.



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9. In  $\triangle ABC$ ,  $AB = 2.5$  cm and  $BC = 6$  cm. what is the possible length of  $AC$  ?



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10. In a quadrilateral  $ABCD$ ,  $AB$  is the shortest side and  $DC$  is the longest side. What is the relation

between

(i)  $\angle B$  and  $\angle D$  (ii)  $\angle A$  and  $\angle C$ .



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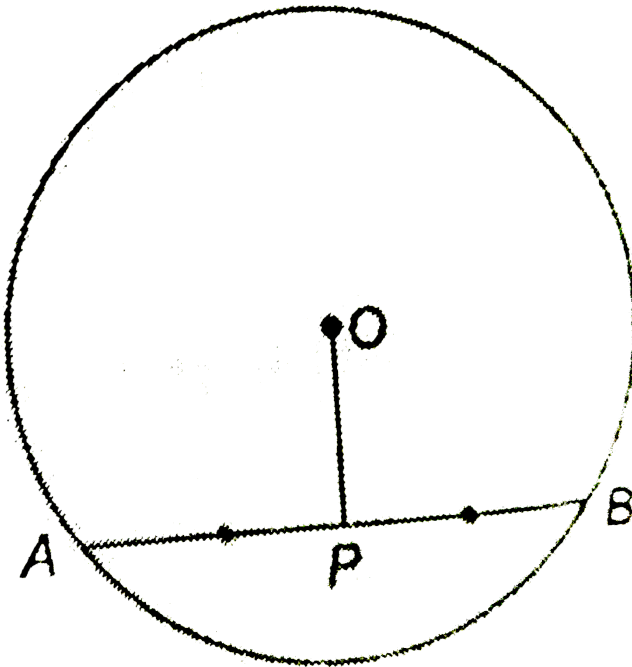
## Revision Exercise Short Answer Type Question

1. P is any point in the angle ABC such that the perpendiculars drawn from P on AB and BC are equal. Prove that BP bisects angle ABC.



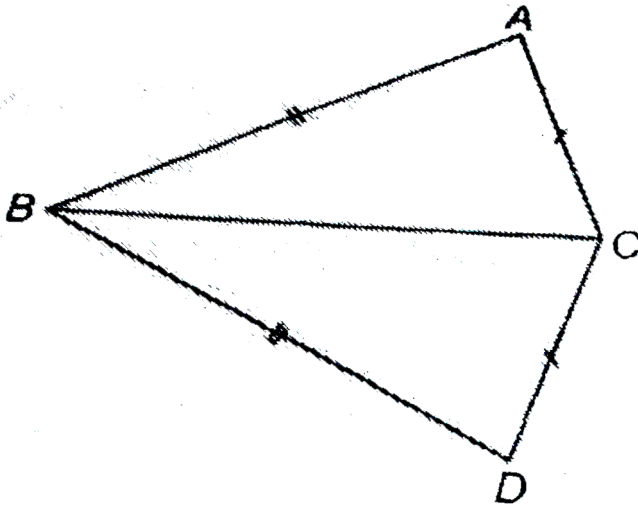
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2. The given figure shows a circle with centre  $O$ .  $P$  is mid-point of chord  $AB$ . Show that  $OP$  is perpendicular to  $AB$ .



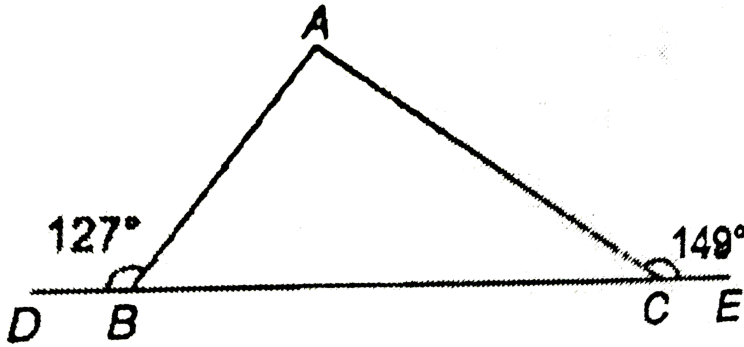
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3. In the given figure  $AB = DB$ ,  $AC = DC$  if  $\angle ABD = 58^\circ$ ,  $\angle DBC = 2x - 4^\circ$ ,  $\angle ACB = y + 15^\circ$  and  $\angle DCB = 63^\circ$ , find the values of  $x$  and  $y$ .



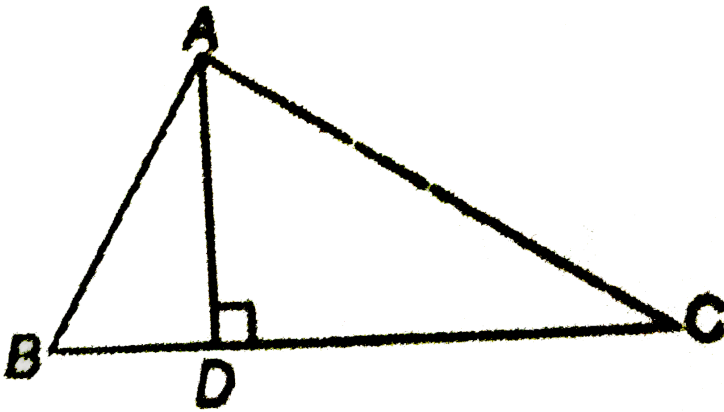
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4. In the adjoining figure,  $\angle ABD = 127^\circ$  and  $\angle ACE = 149^\circ$ . Prove that  $AC > AB$ .



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5. In the figure, AD is perpendicular to BC, prove that  $AB + AC > 2AD$ .



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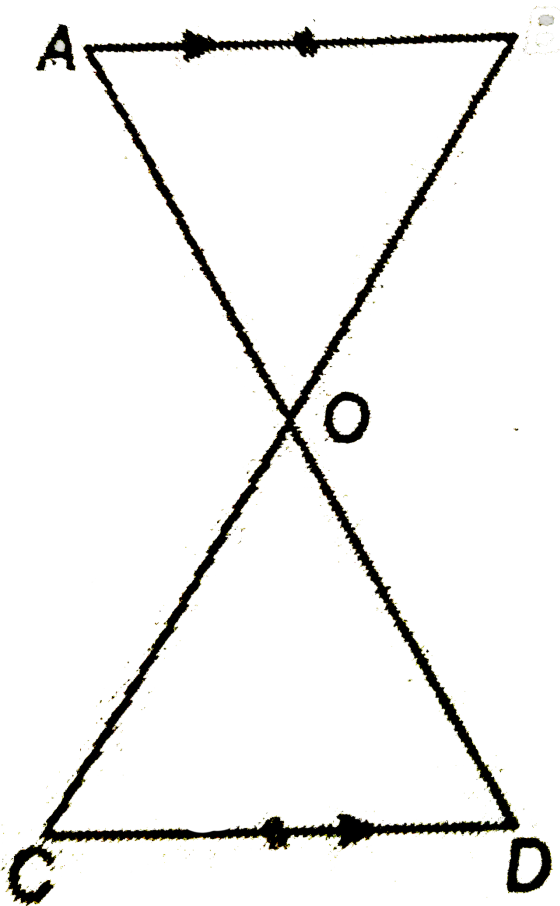
6. In the adjoining figure  $AB = CD$  and  $AB \parallel CD$

prove that :

(i)  $\triangle AOB \cong \triangle DOG$

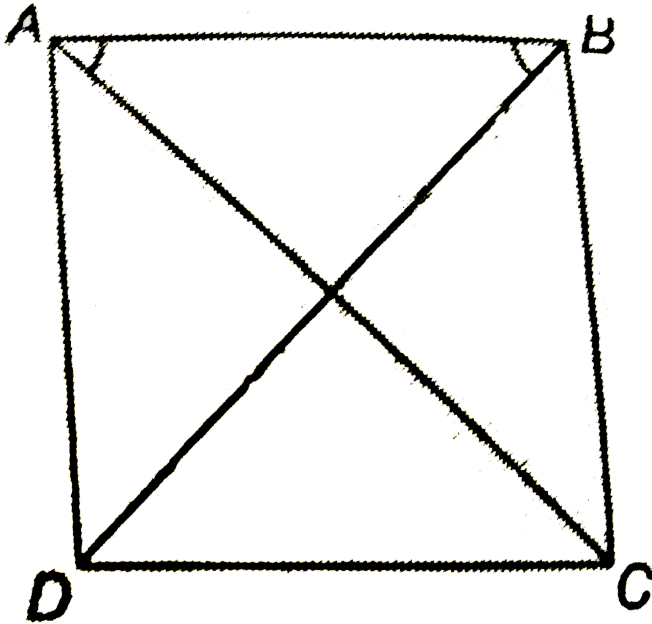


(ii) AD and BC bisect each other at point O.



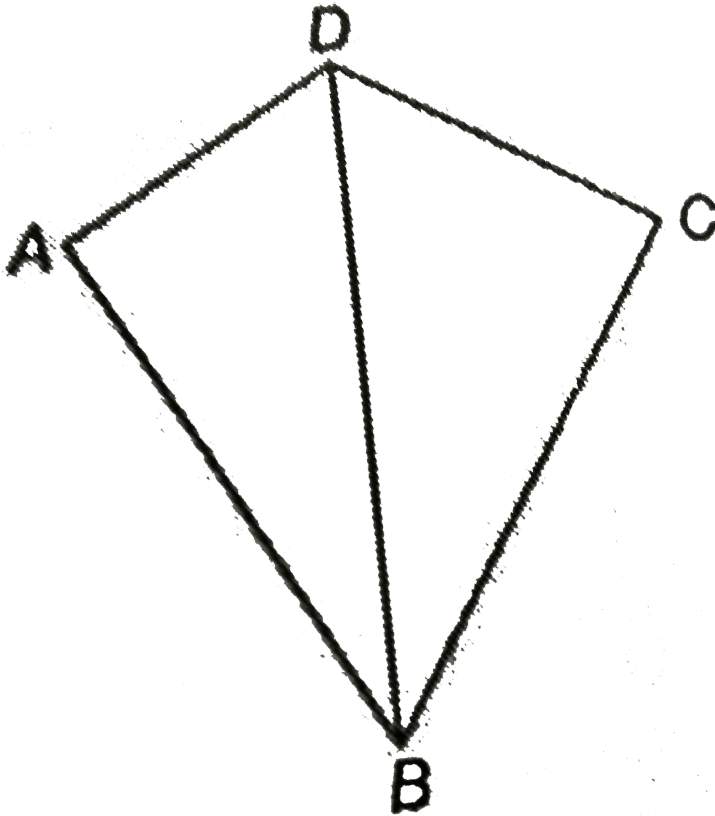
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7. In the adjoining figure,  $\angle DAB = \angle ABC$  and  $AD = BC$  prove that  $BD = AC$ .



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8. In the adjoining figure,  $AD = DC$  and bisects  $\angle ADC$ . Prove that  $\triangle ADB \cong \triangle CDB$ .



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9. In  $\triangle ABC$ ,  $AB = AC$  and D is a point in BC so that  $BD = CD$ . Prove that AD bisects  $\angle BAC$ .



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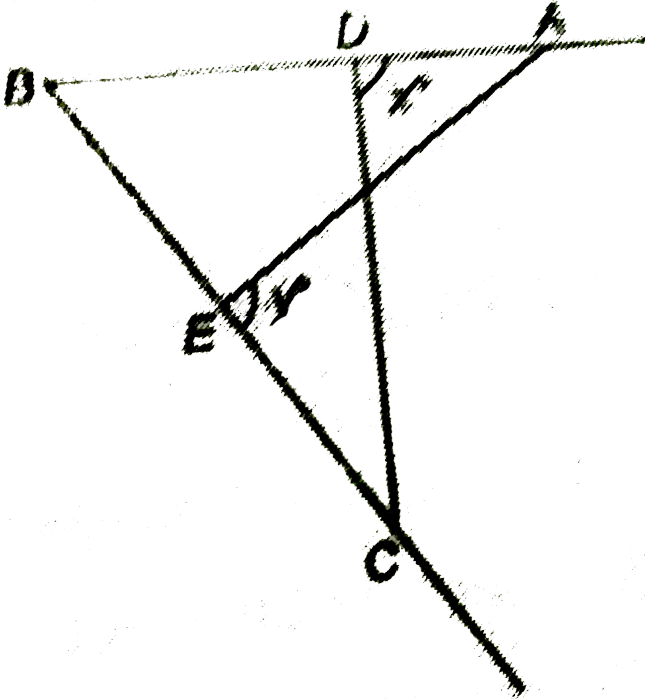
10. In  $\triangle PQR$ , if S is any point on side QR, show that  $PQ + QR + RP > 2PS$ .



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Revision Exercise Long Answer Type Question

1. In the given figure, if  $x = y$  and  $AB = CB$ , then prove that  $AE = CD$ .



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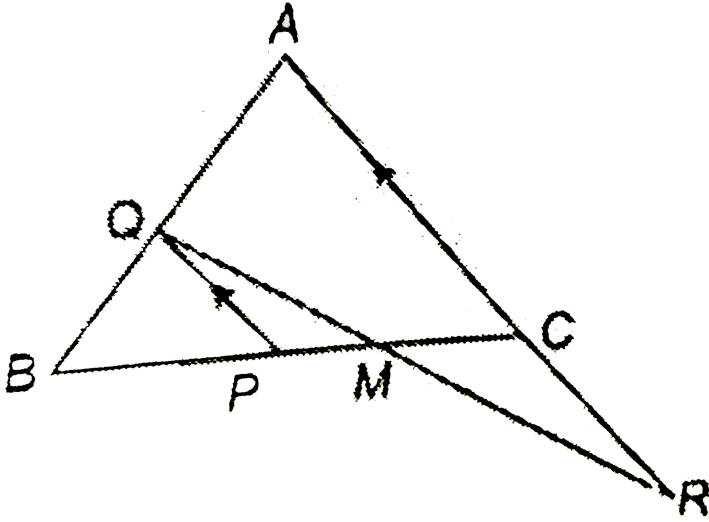
2. ABC is a triangle, right angled at B. If BCDE is a square on side BC and ACFG is a square on AC, prove that  $AD = BF$ .



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3. In the given figure, ABC is an equilibrium triangle,  $PQ \parallel AC$  and AC is produced to R such that  $CR = BP$ .

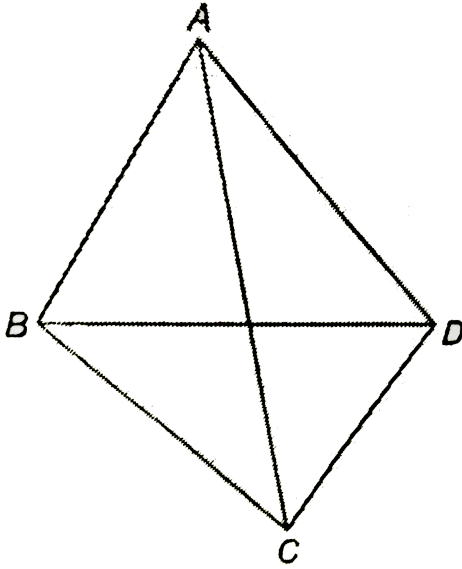
Prove that  $QR$  bisects  $PC$ .



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4. The given figure shows a quadrilateral  $ABCD$ . Prove that :

$$AB + BC + CD + DA > AC + BD$$

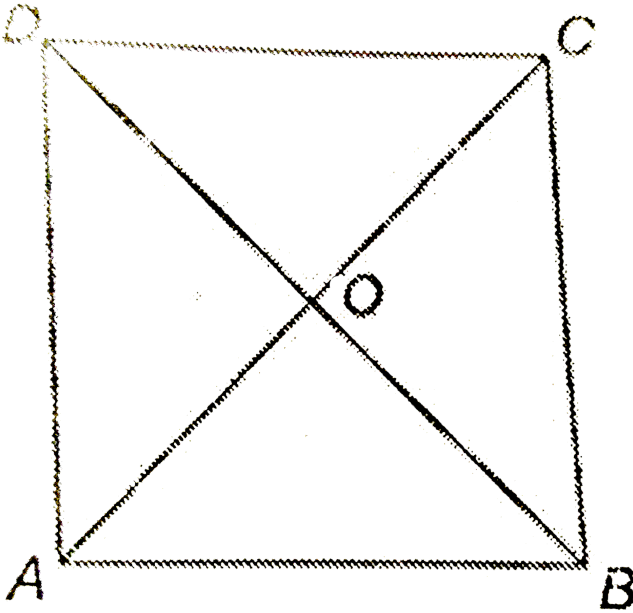


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5. In the adjoining figure, the diagonals AC and BD of a quadrilateral ABCD intersect point O. Prove that :



$$AB + BC + CD + DA < 2(AC + BD)$$



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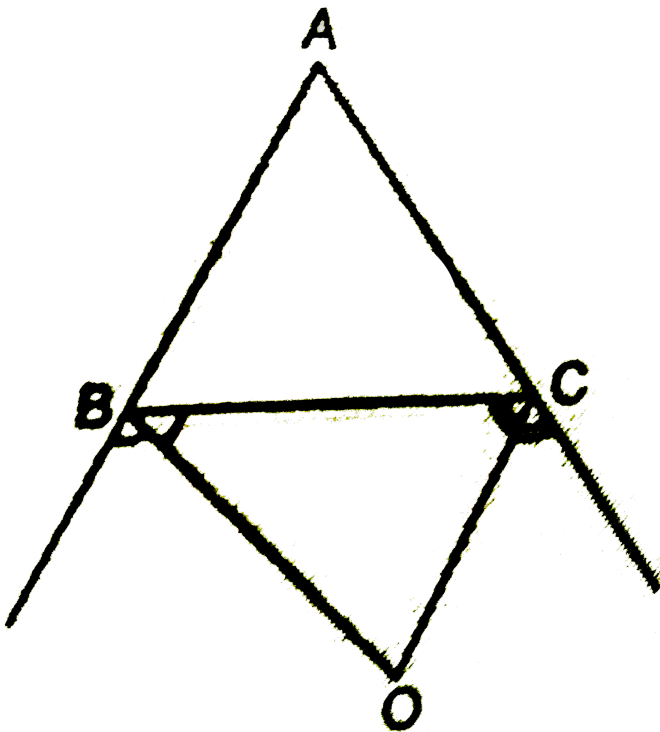
6. Let O be any point in the interior of  $\triangle ABC$ , prove that :

$$AB + BC + CA < 2(OA + OB + OC)$$



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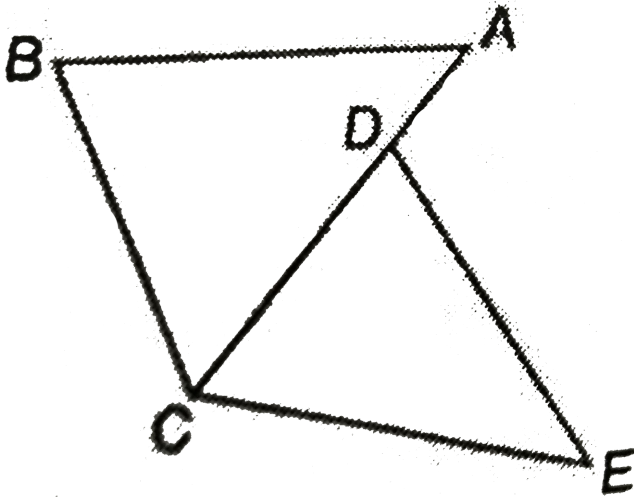
7. In the adjoining figure  $BO$  and  $CO$  are the bisectors of  $\angle CBD$  and  $\angle BCE$  respectively. If  $AC > AB$ , prove that  $OB > OC$ .



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8. In the following figure, if  $AD = DE$ . Prove that :

$$AB + BC > CE$$



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