MATHS

BOOKS - CBSE COMPLEMENTARY MATERIAL

MATHS (HINGLISH)

TRIANGLES

Part A

1. Which of the following is not a criterion for congruence of triangle ?

A. SSS

B. RHS

C. AAA

D. SAS

Answer: C

Watch Video Solution

2. If $AB \cong CD$ then

A. $AB < CD$

B. $AB + CD = 0$

C. $AB = CD$

D. $AB > CD$

Answer: C

Watch Video Solution

3. If $\triangle ABC \cong \triangle DEF$ then

A. $AC = DE$

B. $BC = DF$

C. $FE = CB$

D. $AB = DF$

Answer: C

Watch Video Solution

4. If one angle of a triangle is equal to the sum of the other two angles, then the triangle is

A. an equilateral triangle

B. an isosceles triangles

C. an obtuse triangle

D. a right triangle

Answer: A

Watch Video Solution

5. If AB=QR,BC=PR and CA=PQ, then

A. $\triangle ABC \cong \triangle PQR$

B. $\triangle CBA \cong \triangle PRQ$

C. $\triangle BAC \cong \triangle RPQ$

D. $\triangle PQR \cong \triangle BCA$

Answer: B

Watch Video Solution

6. In $\triangle ABC$ and $\triangle DFE, AB = FD, \angle A = \angle D$.

The which of the following is correct ?

A. $BC = EF$

B. $AC = DE$

C. $AC = EF$

D. $BC = DE$

Answer: A::C::D

Watch Video Solution

7. If

$\triangle ABC \cong \triangle FDE, AB = 5cm, \angle B = 40^\circ, \angle A = 80^\circ$

Then which of the following is correct ?

A. DF = 5 cm , $\angle F = 60^\circ$

B. DF = 5 cm ,$\angle E = 60^\circ$

C. DF = 5 cm , $\angle C = 60^\circ$

D. Both (B) and (C)

Answer: A::B::C::D

Watch Video Solution

8. In $\triangle ABC$,$AB = AC$, $\angle B = 40^\circ$ Then $\angle C$ is equal to

A. 50°

B. 40°

C. 80°

D. 140°

Answer: D

Watch Video Solution

9. In $\triangle ABC$, $AB = BC$, $\angle B = 40^\circ$ Then $\angle A$ is equal to

A. 70°

B. 40°

C. 140°

D. 100°

Answer: A

Watch Video Solution

10. In right $\triangle ABC, AB = BC$, then $\angle A$ is equal to

A. 45°

B. 90°

C. 60°

D. None of these

Answer: D

Watch Video Solution

11. In $\triangle PQR, \angle R = \angle P, \quad QR = 4cm$ and $PR = 5cm$, Then PQ = _____

A. 4 cm

B. 5 cm

C. 1 cm

D. 9 cm

Answer: C::D

Watch Video Solution

12. If a, b,c are the lengths of the sides of triangle , then

A. $a - b > c$

B. $a + b < c$

C. $c = a + b$

D. $c < a + b$

Answer: A::B::C

Watch Video Solution

13. It is not possible to construct a triangle when the lengths of its sides are

A. 3 cm, 4 cm , 5 cm

B. 3 cm , 5 cm , 5 cm

C. $5.3cm, 2.2cm, 3.1cm$

D. $9.3cm, 5.2cm, 7.4cm$

Answer: A::B::C

Watch Video Solution

14. In $\triangle ABC, \angle B = 90^\circ$ then

A. $AC = AB$

B. $AC < AB$

C. $AC < BC$

D. $AC > AB$

Answer: A::B::C

Watch Video Solution

15. If $\triangle ABC,$ is obtuse angled at C , then

A. $AB > BC$

B. $AB = BC$

C. $AB < BC$

D. $AC < BC$

Answer: A::B::C

Watch Video Solution

16. In $\triangle PQR$, if $\angle R > \angle Q$ then

A. $QR > PR$

B. $PQ > PR$

C. $PQ < PR$

D. $QR < PR$

Answer:

Watch Video Solution

17. In $\triangle ABC$ and $\triangle PQR$ If AB = QP ,$\angle B = \angle P$, $BC = PR$ then which one of the following congruence conditions applies :

A. SAS

B. ASA

C. SSS

D. RHS

Answer: A

Watch Video Solution

18. In $\triangle ABC$ and $\triangle DEF$, if $\angle A = \angle F, \angle B = \angle D$ and AB = FD, then which one of the folloing congruence conditions applies :

A. SAS

B. ASA

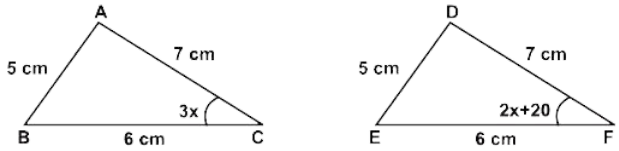
C. SSS

D. RHS

Answer: A

Watch Video Solution

19. In the given figure , the value of x is



A. 4

B. 32

C. 20

D. 180

Answer: C

Watch Video Solution

20. If $\triangle PQR \cong \triangle LMN$ then $NL =$ _____

A. PQ

B. QR

C. RP

D. None of these

Answer: C

Watch Video Solution

21. If $\triangle CAB \cong \triangle MLK$ then $\angle K$ = _____

A. $\angle A$

B. $\angle B$

C. $\angle C$

D. None of these

Answer: A::B

Watch Video Solution

22. In $\triangle ABC$, $\angle C$ is the greatest angle , then

A. $AC > AB$

B. $AB > AC$

C. $AB > BC$

D. Both (b) and (c)

Answer: A::B::D

Watch Video Solution

23. For $\triangle ABC$, which of the following is incorrect ?

A. $(BC - AB) < AC$

B. $(AC - BC) < AB$

C. $(AC - AB) < BC$

D. None of these

Answer:

Watch Video Solution

24. For $\triangle ABC \cong \triangle ACB$, then

A. AB=AC

B. AB=BC

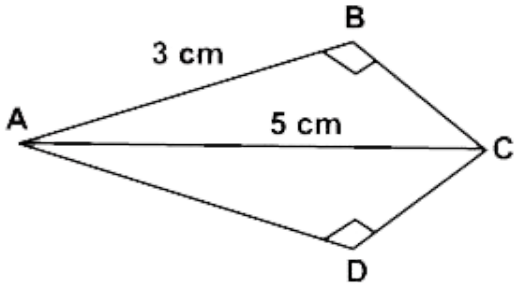
C. AC=BC

D. None of these

Answer: A

Watch Video Solution

25. In the given figure AC is bisector of $\angle BAD$, $AB = 3cm$, $AC = 5cm$, then $AD =$ _____



A. 2 cm

B. 5 cm

C. 3 cm

D. 8 cm

Answer: C

Watch Video Solution

26. If $\triangle ABC \cong \triangle DEF$ then

AB = _____

Watch Video Solution

27. If $\triangle ABC \cong \triangle DEF$ then

BC = _____

Watch Video Solution

28. If $\triangle ABC \cong \triangle DEF$ then

CA = _____

Watch Video Solution

29. If $\triangle ABC \cong \triangle DEF$ then

$\angle E =$ _____

Watch Video Solution

30. If $\triangle ABC \cong \triangle DEF$ then

$\angle EDF =$ _____

Watch Video Solution

31. If $\triangle ABC \cong \triangle DEF$ then

$\angle BCA =$ _____

Watch Video Solution

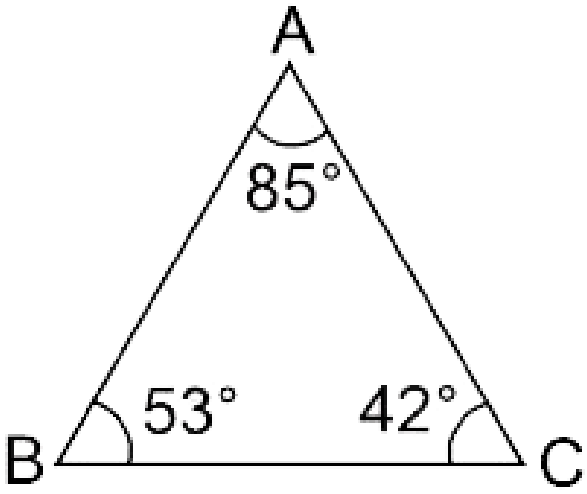
32. Circle $O_1 \cong$ Circle O_2, If radius of circle $O_1 = 6cm$ then diameter of circle O_2 is _____

Watch Video Solution

33. In the given figure , if a= b = c then $\angle AOC =$ _____ ??

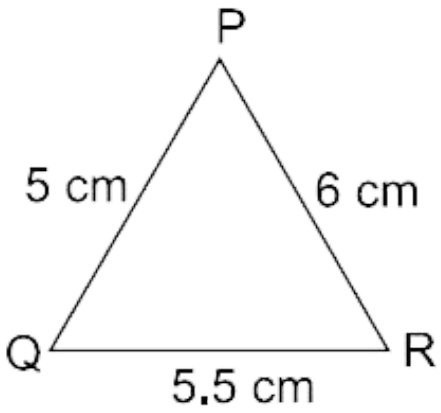
Watch Video Solution

34. Which of the longest side of the triangles given in the figure ?



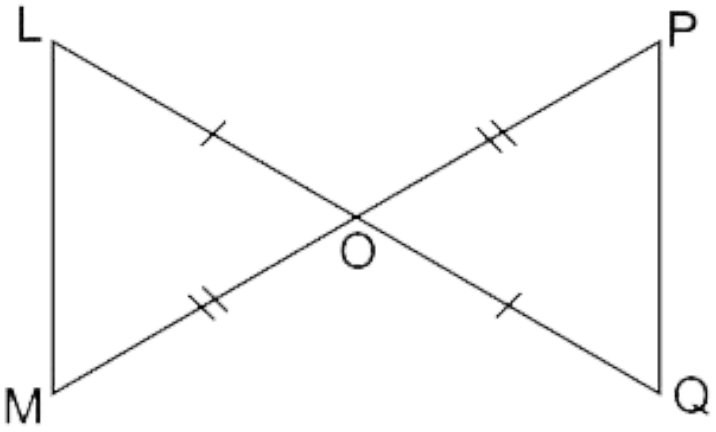
Watch Video Solution

35. Which of the largest angle in the $\triangle PQR$?



Watch Video Solution

36. Which two triangles are congruent in the given figure . Write them in symbolic form .



Watch Video Solution

Part A Fill In The Blanks

1. Two figures are congrument if they have the _____ shape and same _____

Watch Video Solution

2. Two circles are congrument if they have _____ radii .

Watch Video Solution

3. Two equilateral triangles are congrument. if they have _____ sides .

Watch Video Solution

4. Two square are congruent if they have _____ sides .

Watch Video Solution

5. The sum of any two sides of a triangle is _____ than the third side .

Watch Video Solution

6. The difference of any two sides of a triangle is _____ than the third side .

Watch Video Solution

7. Fill in the blanks to make the following statements true: In a right triangle the hypotenuse is the ..... side. The sum of three altitudes of a triangle is ..... than its

perimeter. The sum of any two sides of a triangle is ..... than the third side. If two angles of a triangle are unequal, then the smaller angle has the ..... side opposite to it. Difference of any two sides of a triangle is ..... than the third side. If two sides of a triangle are unequal, then the larger side has ..... angle opposite to it.

Watch Video Solution

8. If two angles of a triangle are unequal , then the smaller angle has the _____ side opposite to it .

Watch Video Solution

9. If two sides of a triangle are inequal , then the larger side has _____ angle opposite to it .

View Text Solution

10. Theorem 7.3 : The sides opposite to equal angles of a triangle are equal.

Watch Video Solution

Part A State Which Of The Following Statements Are True And False

1. In a triangle the greater angle has the longer side opposite to it.

Watch Video Solution

2. Two triangles are congruent if three angles of one triangle are equal to three angles of the other triangle.

Watch Video Solution

3. In a triangle , the shortest side has the smallest angle opposite to it .

View Text Solution

4. It is necessary to write the correspondence of vertices correctly for writing congruence of triangles in symbolic form .

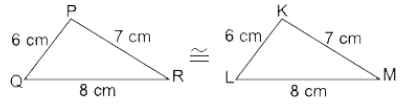
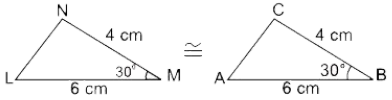
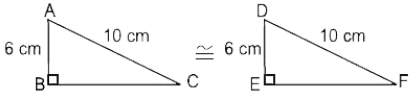
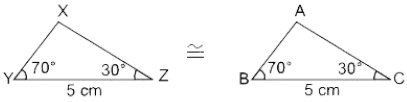
Watch Video Solution

5. All the line segment that can be drawn to a given line; from a point;not lying on it; the perpendicular line segment is the shortest.

Watch Video Solution

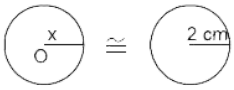
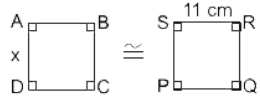
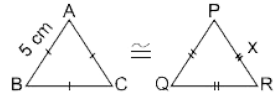
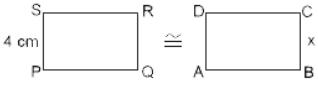
Part B

1. Match the columns :

Column A	Column B
(i) 	(a) SAS congruence
(ii) 	(b) SSS congruence
(iii) 	(c) ASA congruence
(iv) 	(d) RHS congruence

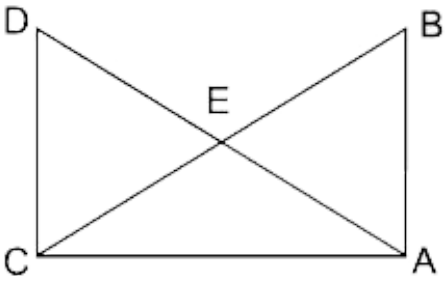
Watch Video Solution

2. Match the columns :

Column A		Column B
(i)	 x = ?	(a) 2 cm
(ii)	 x = ?	(b) 5 cm
(iii)	 x = ?	(c) 10 cm
(iv)	 x = ?	(d) 4 cm
(v)	 x = ?	(e) 11 cm

Watch Video Solution

3. In the given figure . If $AB = CD, AD = BC$ then prove that $\triangle ADC \cong \triangle CBA$

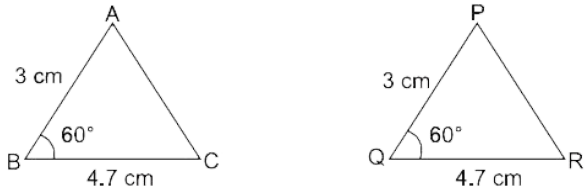


Watch Video Solution

4. If ΔABC is an isosceles triangle such that $AB = AC$, then altitude AD from A on BC bisects BC (Fig.43).

Watch Video Solution

5. Which criteria of congruence of triangles is satisfied in the given figure .

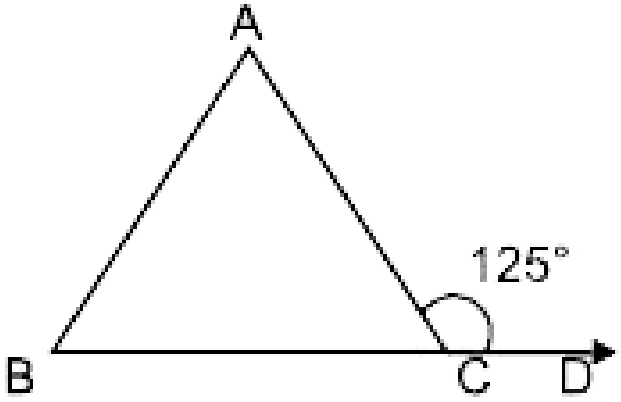


Watch Video Solution

6. In a $\triangle PQR, \angle P = 110^\circ$, PQ = PR . Find $\angle Q$ and $\angle R$

Watch Video Solution

7. In the given figure AB=BC and $\angle ACD = 125^\circ$, Find $\angle A$

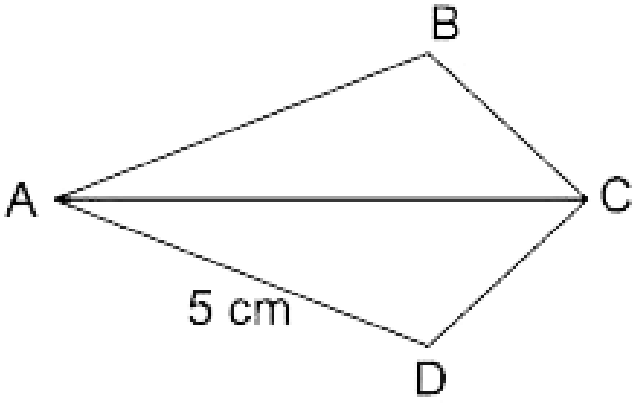


Watch Video Solution

8. In $\triangle ABC$, if $\angle A = 55^\circ, \angle B = 75^\circ$ then find out the smallest and longest side of the triangle .

Watch Video Solution

9. In the given figure , AC bisects $\angle A$ and $\angle C$. If $AD = 5\ cm$ find AB



Watch Video Solution

10. The vertex angle of an isosceles triangle is 80° , Find ot the measure of base angles .

Watch Video Solution

Part C

1. If Q is a point on the side SR of a $\Delta PSR such that \widehat{PQ} = PR then prove that$ PS gt PQ`

Watch Video Solution

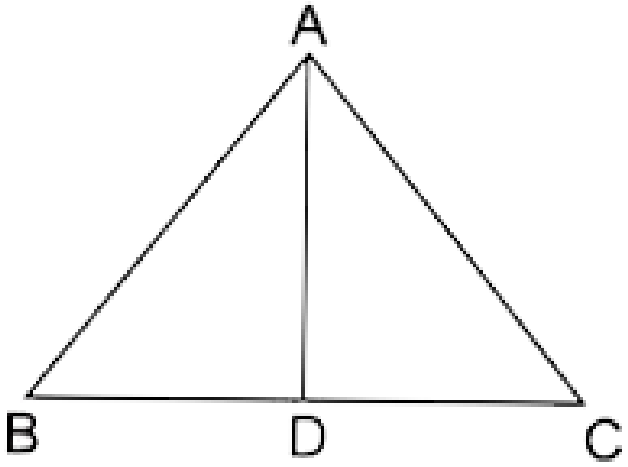
2. ABC is a triangle and D is the mid-point of BC . The perpendiculars from D to AB and AC are equal. Prove that the triangle is isosceles.

Watch Video Solution

3. Theorem 7.2 : Angles opposite to equal sides of an isosceles triangle are equal.

Watch Video Solution

4. In the given figure , $AC > AB$ and AD bisects $\angle BAC$ Prove that $\angle ADC > ADB$

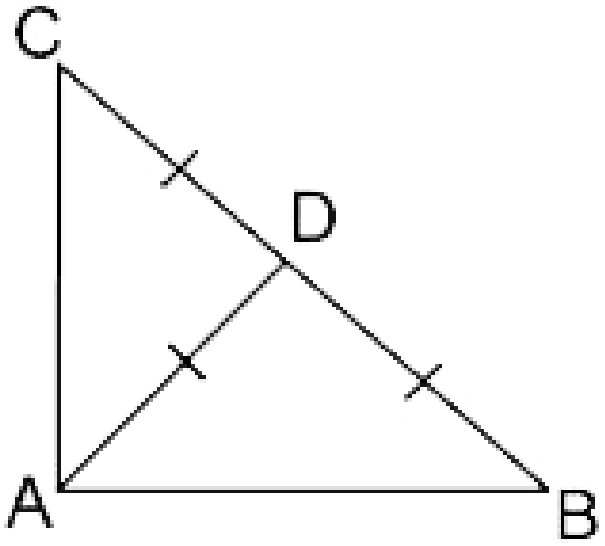


Watch Video Solution

5. S is any point in the interior of a $\triangle PQR$. Prove that $SQ + SR < PQ + PR$

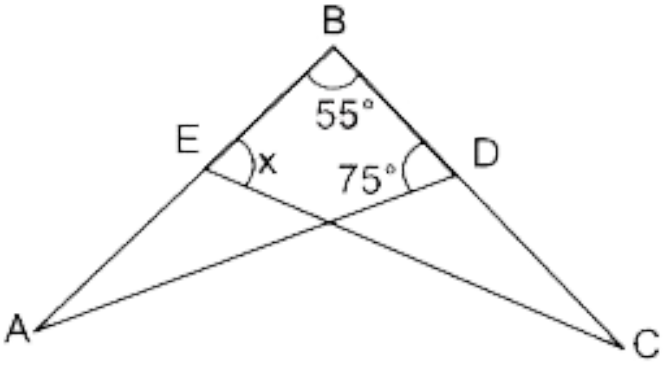
Watch Video Solution

6. In the given if $AD = BD = CD$, Find $\angle BAC$



Watch Video Solution

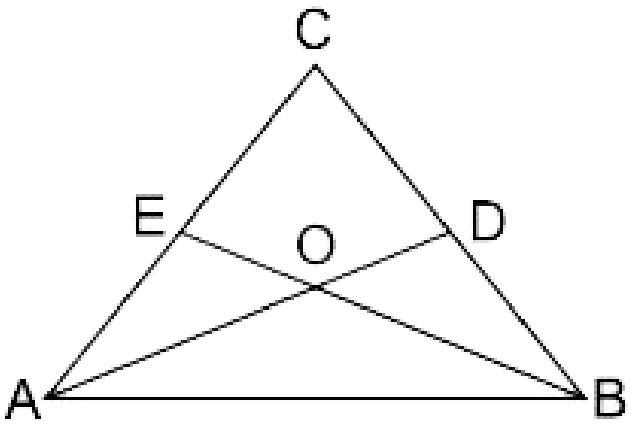
7. In the given figure , if $AB = BC$ and $\angle A = \angle C$ then find the value of x



Watch Video Solution

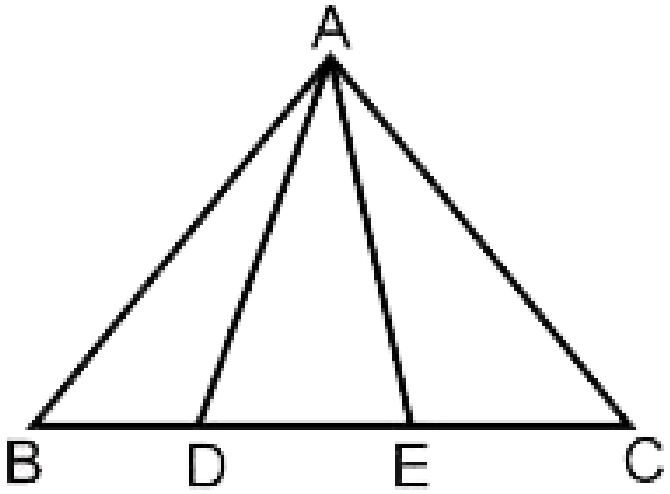
8. In the given figure $\angle ABC = \angle BAC$, D and E are pointts on BC and AC respectively such that DB = AE . If

AD and BE intersect at O then prove that OA = OB



Watch Video Solution

9. In the given figure , if AB = BC , $\angle BAD = \angle CAE$ then prove that $\triangle ADE$ is an isosceles triangle .



Watch Video Solution

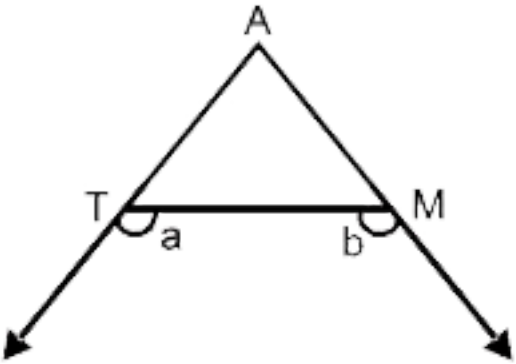
10. In $\triangle DEF, \angle E = 2\angle F$, DM is the bisector of $\angle EDF$ that intersects EF at M. If $DM = MF$, then prove that $\angle EDF = 72^\circ$

Watch Video Solution

11. Show that the angles of an equilateral triangle are $60o$each.

Watch Video Solution

12. In the given ,figure $\angle a > \angle b$, show that $\angle ATM < \angle AMT$



Watch Video Solution

Part D

1. $AD,\ BE\ and\ CF,$ the altitudes of ABC are equal. Prove that ABC is an equilateral triangle.

Watch Video Solution

2. Angle-Side-Angle (ASA) Congruence - Two triangles are congruent if two angles and the included side of one triangle are equal to the corresponding two angles and the included side of the other triangle.

Watch Video Solution

3. Let O be any point in the interior of ΔABC, prove that :

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

Watch Video Solution

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

Watch Video Solution

5. Two sides AB and BC and median AM of one triangle ABC are respectively equal to sides PQ and QR and

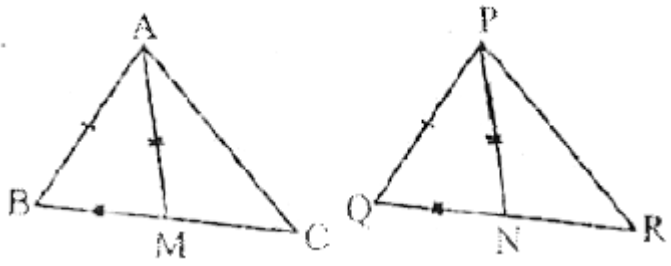
median PN of $\Delta ABC \cong \Delta PQR$(see Fig. 7.40). Show that:(i) $\Delta ABM \cong \Delta PQN$(ii) $\Delta ABC \cong \Delta PQR$

Watch Video Solution

6. Two sides AB and BC and median AM of one triangle ABC are respectively equal to sides PQ and QR and median PN of Δ PQR. Show that

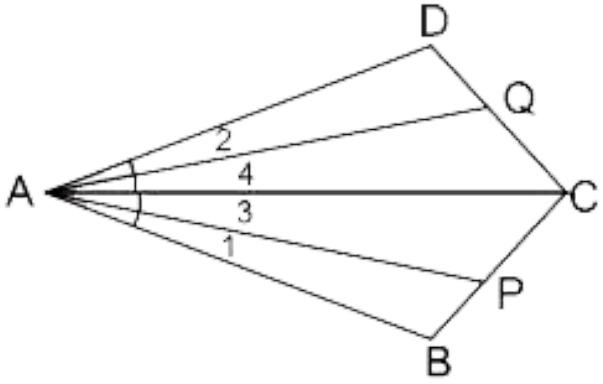
$\Delta ABM \cong \Delta PQN$

(ii) $\Delta ABC \cong \Delta PQR$



Watch Video Solution

7. In the given figure , $AB = AD$, $\angle 1 = \angle 2$ and $\angle 3 = \angle 4$ .Prove that $AP = AQ$



Watch Video Solution

8. In right triangle ABC, right angled at C, M is the mid-point of hypotenuse AB. C is joined to M and produced

to a point D such that$DM = CM$. Point D is joined to point B (see Fig. 7.23). Show that:(i) $\Delta AMC \cong \Delta BMD$ (ii) `/_

Watch Video Solution

9. The sum of ny two sides of a triangle is greater than third side.

Watch Video Solution

10. Vandana wishes to literate the poor children of the nearby slum area . She makes flash cards for them as

shown in the given figure .

Write which type of congruency is satisfied here.

Watch Video Solution

11. Vandana wishes to literate the poor children of the nearby slum area . She makes flash cards for them as shown in the given figure .

Write which type of congruency is satisfied here.

Watch Video Solution

12. Vandana wishes to literate the poor children of the nearby slum area . She makes flash cards for them as

shown in the given figure .

Write which type of congruency is satisfied here.

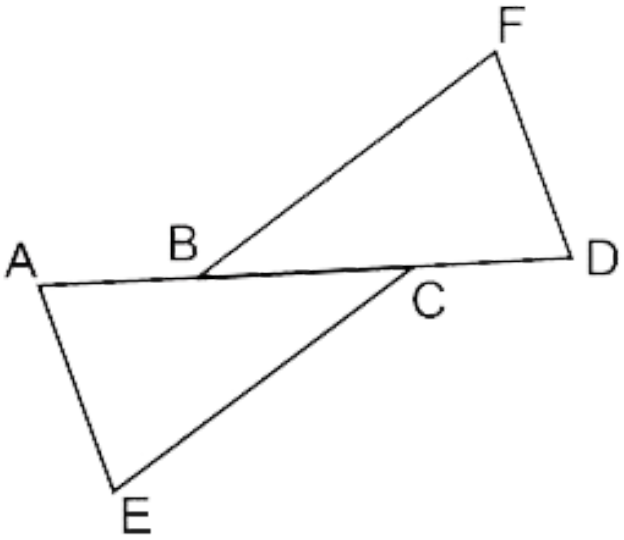
Watch Video Solution

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

Watch Video Solution

14. In the given figure , $AB = CD, CE = BF$ and $\angle ACE = \angle DBF$. Prove that

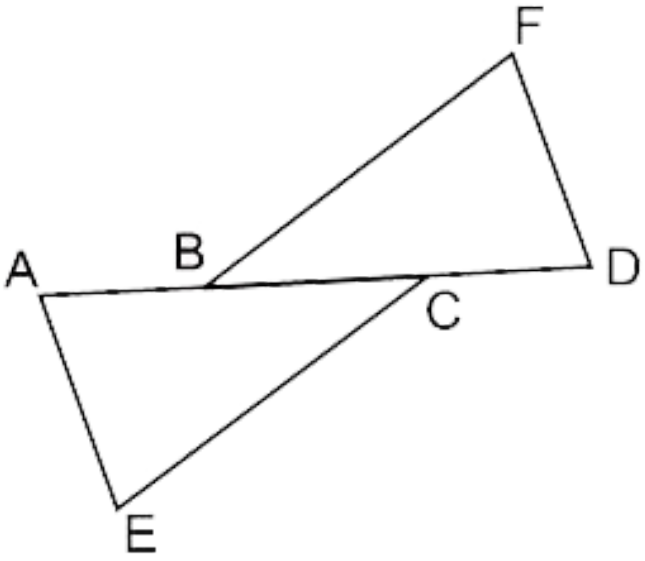
$\triangle ACE \cong \triangle DBF$



Watch Video Solution

15. In the given figure , $AB = CD, CE = BF$ and $\angle ACE = \ = \angle DBF$. Prove that

$AE = DF$



Watch Video Solution

Practice Test

1. Find the measure of each exterior angle of an equilateral triangle.

Watch Video Solution

2. Which of the following is not a criterion for congruence of triangle ?

A. SSA

B. SAS

C. ASA

D. SSS

Answer:

Watch Video Solution

3. In a $\triangle ABC$, If AB = AC and $\angle A = 70$ Find $\angle B$ and $\angle C$

Watch Video Solution

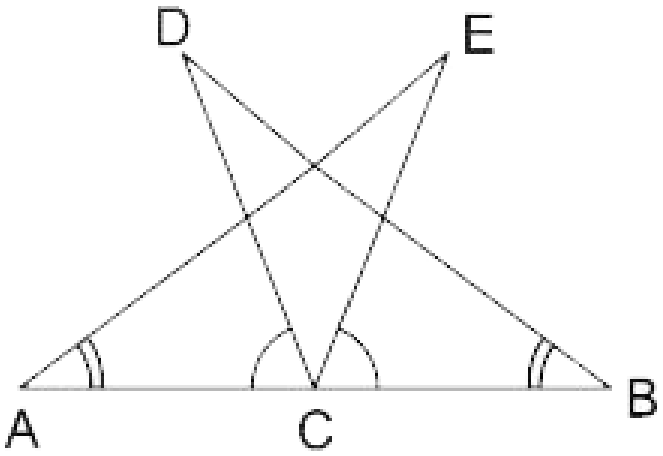
4. The vertical angle of an isosceles triangle is 100^0. Find its base angles.

Watch Video Solution

5. ΔABC 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.

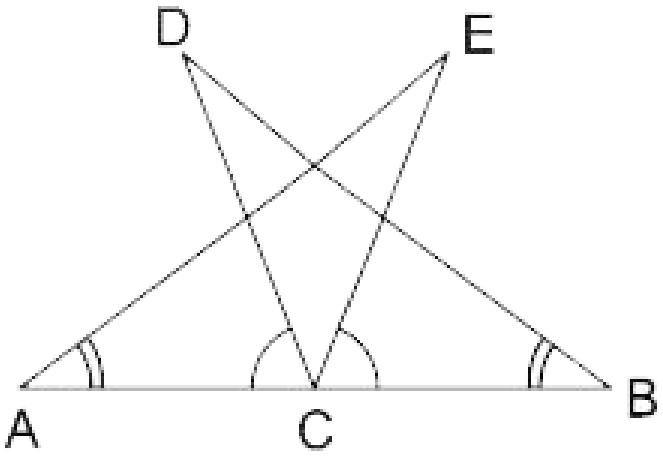
Watch Video Solution

6. In the given figure , C is the midpoint of AB, if $\angle DCA = \angle ECB$ and $\angle DBC = \angle EAC$, Prove that $DC = EC$ and $BD = AE$



Watch Video Solution

7. In the given figure , C is the midpoint of AB, if $\angle DCA = \angle ECB$ and $\angle DBC = \angle EAC$, Prove that $DC = EC$ and $BD = AE$



Watch Video Solution

8. In right triangle ABC, right angled at C, M is the mid-point of hypotenuse AB. C is joined to M and produced to a point D such that $DM = CM$. Point D is joined to point B (see Fig. 7.23). Show that:(i) $\Delta AMC \cong \Delta BMD$ (ii) `/_

Watch Video Solution