7

Congruence Of Triangles

7th Standard

Mathematics

Exam Time : 00:01:00 Hrs

Total Marks : 1

51 x 1 = 51

1) Number of elements of a triangle is

(a) 6 (b) 5 (c) 4 (d) 3

2) Two figures are said to be congruent, if they have exactly the same

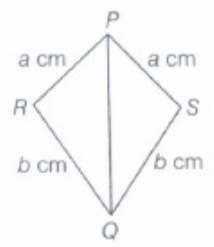
(a) area (b) perimeter (c) shape and size (d) length and width

3) Two triangles are congruent, if two angles and the side included between them in one of the triangles are equal to the two angles and the side included between them of the other triangle. This is known as the

(a) RHS congruence criterion (b) ASA congruence criterion

(c) SAS congruence criterion (d) AAA congruence criterion

4) By which congruency criterion, the two triangles in the following figure are congruent?

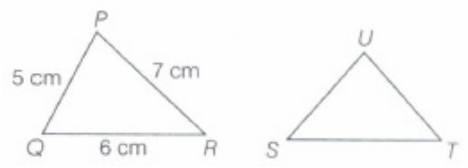


(a) RHS (b) ASA (c) SSS (d) SAS

5) By which of the following criterion, the two triangles cannot be proved congruent?

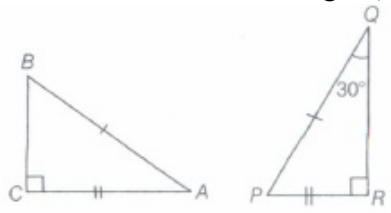
(a) AAA (b) SSS (c) SAS (d) ASA

6) ΔPQR is congruent to ΔSTV (in figure), then what is the length of TU?



(a) 5 cm (b) 6 cm (c) 7 cm (d) Cannot be determined

7) If $\Delta ABC \cong \Delta PQR$, then the value of $\angle A$ will be



(a) 25° (b) 60^0 (c) 55^0 (d) 90^0

8) Which of the following rule of congruency say that $\Delta ABC \cong \Delta PQR$

(a) SSS (b) RHS (c) ASA (d) SAS

9) By applying ASA congruence rule, it is to be established that $\Delta ABC \cong \Delta QRP$ and it is given that BC = RP. What additional information is needed to establish the congruence?

(a) AB = OR and $\angle C = \angle P$ (b) $\angle B = \angle R$ and $\angle A = \angle Q$ (c) $\angle B = \angle R$ and $\angle C = \angle P$

(d) None of the above

10) Which congruence criterion do you use in the following?
Given, ZX = RP, RQ =ZY, $\angle PRQ = \angle XZY$. So, $\Delta POR \cong \Delta XYZ$

(a) ASA rule (b) SSS rule (c) RHS rule (d) SAS rule

11) Name of the angle included between the sides DE and EF of ΔDEF:

(a) $\angle$ DEF (b) $\angle$ EFD (c) $\angle$ EDF (d) None of these

12) In SAS congruency

(a) Corresponding sides are equal (b) Corresponding angles are equal

(c) Two corresponding sides and angle included are equal (d) None of these

13) The symbol of correspondence is :

(a) = (b) $\leftrightarrow$ (c) $\neq$ (d) $\cong$

14) If $\Delta ABC \cong \Delta$ PQR, then any $\angle B$ correspond to:

(a) $\angle$ P (b) $\angle R$ (c) $\angle Q$ (d) None of these

15) Two angles are congruent if they have:

(a) their opening in the same direction (b) arms of the same length

(c) the same vertex (d) the same measure

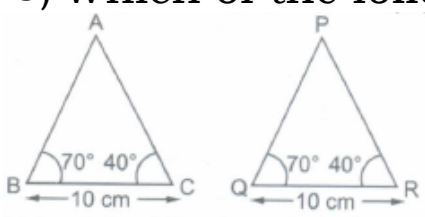
16) Two circles are said to be congruent, if they have the same:

(a) radius (b) area (c) centre (d) none of these

17) Two rectangles are congruent, if they have:

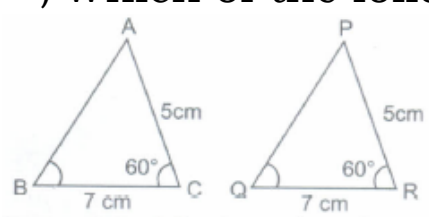
(a) same length (b) same breadth (c) same perimeter (d) same length and breadth

18) Which of the following rules of congruency says that $\Delta ABC \cong \Delta PQR$?



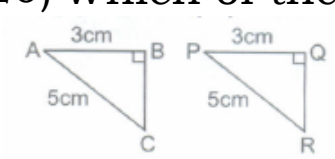
(a) ASA (b) SAS (c) SSS (d) RHS

19) Which of the following rules of congruency says that $\triangle ABC \cong \triangle PQR$?



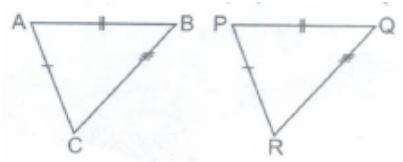
(a) SSS (b) RHS (c) SAS (d) ASA

20) Which of the following rules of congruency says that $\triangle ABC \cong \triangle PQR$?



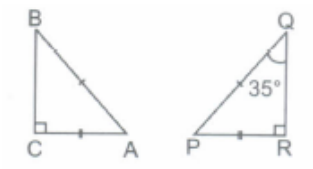
(a) RHS (b) SSS (c) ASA (d) SAS

21) Which of the following rules of congruency says that $\triangle ABC \cong \triangle PQR$?



(a) SAS (b) RHS (c) ASA (d) SSS

22) If $\triangle ABC \cong \triangle PQR$ then the value of $\angle$A is:



(a) 35^0 (b) 55^0 (c) 90^0 (d) 45^0

23) Two equilateral triangles are congruent if they have same:

(a) angle (b) side (c) altitude (d) median

24) If two angles and included side of a triangle are correspondingly equal to two angles and the included side, then the two triangles are congruent by

(a) SSS congruency (b) RHS congruency (c) SAS congruency (d) ASA congruency

25) RHS congruence condition is applicable to two

(a) Right-angled triangles (b) Acute-angled triangles (c) Equilateral angles

(d) Scalene triangles

26) If three sides of a triangle are correspondingly equal to three sides of another triangle, then the two triangles are congruent by;

(a) RHS congruency (b) SSS congruency (c) SAS congruency (d) ASA congruency.

27) 'Under a given correspondence, two triangles are congruent if the three sides of the one are equal to the three corresponding sides of the other.' The above is known as

(a) SSS congruence of two triangles (b) SAS congruence of two triangles

(c) ASA congruence of two triangles (d) RHS congruence of two right-angled triangles.

28) 'Under a given correspondence, two triangles are congruent if two sides and the angle included between them in one of the triangles are equal to the corresponding sides and the angle included between them of the other triangle.'
The above is known as

(a) SSS congruence of two triangles (b) SAS congruence of two triangles

(c) ASA congruence of two triangles (d) RHS congruence of two right-angled triangles.

29) 'Under a given correspondence, two triangles are congruent if two angles and the side included between them in one of the triangles are equal to the corresponding angles and the side included between them of the other triangle.'
The above is known as

(a) SSS congruence of two triangles (b) SAS congruence of two triangles

(c) ASA congruence of two triangles (d) RHS congruence of two right-angled triangles.

30) 'Under a given correspondence, two right-angled triangles are congruent if the hypotenuse and a leg of one of the triangles are equal to the hypotenuse and the corresponding leg of the other triangle.'
The above is known as

(a) SSS congruence of two triangles (b) SAS congruence of two triangles

(c) ASA congruence of two triangles (d) RHS congruence of two right-angled triangles

31) For two given triangles ABC and PQR, how many matchings are possible?

(a) 2 (b) 4 (c) 6 (d) 3

32) The symbol for congruence is

(a) $\equiv$ (b) $\cong$ (c) $\leftrightarrow$ (d) =

33) The symbol for correspondence is

(a) = (b) $\leftrightarrow$ (c) $\equiv$ (d) $\cong$

34) If $\Delta ABC \cong \Delta PQR$, then $\bar{AB}$ corresponds to

(a) $\bar{PQ}$ (b) $\bar{QR}$ (c) $\bar{RP}$ (d) none of these.

35) If $\Delta ABC \cong \Delta PQR$, then $\bar{BC}$ corresponds to

(a) $\bar{PQ}$ (b) $\bar{QR}$ (c) $\bar{RP}$ (d) none of these

36) If $\Delta ABC \cong \Delta PQR$, then $\bar{CA}$ corresponds to

(a) $\bar{PQ}$ (b) $\bar{QR}$ (c) $\bar{RP}$ (d) none of these

37) If Δ $\Delta ABC \cong \Delta$ PQR, then any $\angle A$ correspond to:

(a) $\angle P$ (b) $\angle Q$ (c) $\angle R$ (d) none of these

38) If Δ $\Delta ABC \cong \Delta$ PQR, then any $\angle B$ correspond to:

(a) $\angle P$ (b) $\angle Q$ (c) $\angle R$ (d) none of these

39) If Δ $\Delta ABC \cong \Delta$ PQR, then any $\angle C$ correspond to:

(a) $\angle P$ (b) $\angle Q$ (c) $\angle R$ (d) none of these

40) We want to show that $\Delta ART \cong \Delta PEN$ and we have to use SSS criterion. We have AR = PE and RT = EN. What more we need to show?

(a) AT = PN (b) AT = PE (c) AT = EN (d) none of these

41) We want to show that $\Delta ART \cong \Delta PEN$. We have to use SAS criterion. We have $\angle T = \angle N$, RT = EN. What more we need to show?

(a) PN=AT (b) PN=AR (c) PN = RT (d) None of these

42) We want to show that $\Delta ART \cong \Delta PEN$. We have to use SAS criterion. We have AT = PN, $\angle A = \angle P$. What more we need to show?

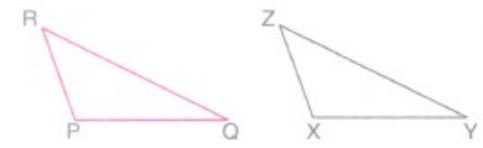
(a) $\angle T = \angle N$ (b) $\angle T = \angle E$ (c) $\angle T = \angle P$ (d) None of these.

43) Which congruence criterion do you use in the following?

Given: AC = DF
AB=DE
BC =EF
So, $\Delta ABC \cong \Delta DEF$

(a) SSS (b) SAS (c) ASA (d) RHS

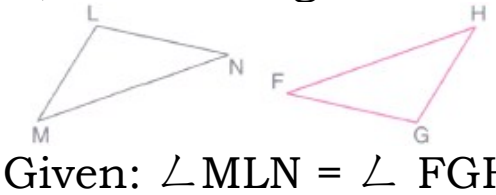
44) Which congruence criterion do you use in the following?



Given: ZX = RP
RQ = ZY
$\angle PRQ = \angle XZY$
So, $\Delta PRQ \cong \Delta XYZ$

(a) SSS (b) SAS (c) ASA (d) RHS

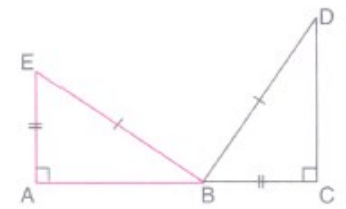
45) Which congruence criterion do you use in the following?



Given: $\angle MLN = \angle FGH$
$\angle NML = \angle GFH$
ML=FG
So, $\Delta LMN \cong \Delta GFH$

(a) SSS (b) SAS (c) ASA (d) RHS

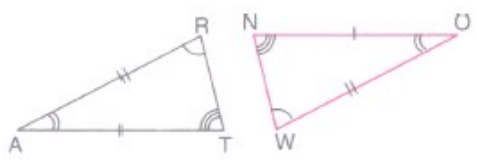
46) Which congruence criterion do you use in the following?



Given: EB = DB
AE=BC
$\angle A = \angle C = 90°$
So, $\Delta ABE \cong \Delta CDB$

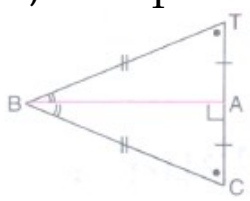
(a) SSS (b) SAS (c) ASA (d) RHS

47) In the following figure, the two triangles are congruent. The corresponding parts are marked. We can write $\Delta RAT \cong$?



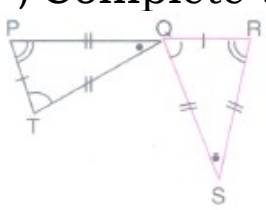
(a) ΔWON (b) ΔWNO (c) ΔOWN (d) ΔONW

48) Complete the congruence statement ΔBCA ≅?



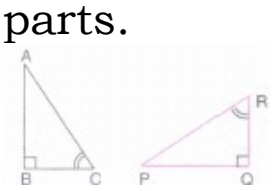
(a) Δ BTA (b) Δ BAT (c) Δ ABT (d) Δ ATB

49) Complete the congruence statement Δ QRS ≅?



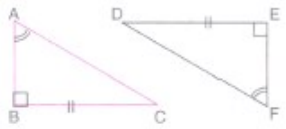
(a) Δ TPQ (b) Δ TQP (c) Δ QTP (d) Δ QPT

50) If Δ ABC and Δ PQR are to be congruent, name one additional pair of corresponding parts.



(a) BC = QR (b) BC = PQ (c) BC =PR (d) none of these.

51) By which congruence, is Δ ABC ≅ Δ FED?



(a) SSS (b) SAS (c) ASA (d) RHS

48 x 1 = 48

52) If two line segments have the _____ length, then they are congruent.

53) Two triangles are said to be congruent, if pairs of corresponding side and the corresponding ___ are equal.

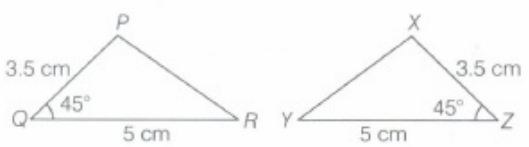
54) When the hypotenuse and one side of one right angled triangle are respectively equal to the hypotenuse and one side of the other right angled triangle, the triangles are congruent This is call _____ congruence of triangle.

55) Two angles are said to be congruent, if they have _____

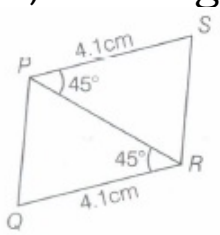
56) In Δ KMN, the included angle between MN and NK is _____

57) Two squares are congruent, if they have same _____

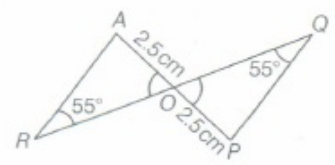
58) In the given figures, ΔPQR ≅ Δ _____



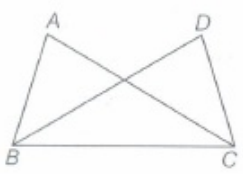
59) In the given figure, ΔPQR ≅ Δ _____



60) In the given figure, ΔARO ≅ Δ _____



61) In the following figure Δ _____ ≅ ΔBDC



62) If ΔABC ≅ ΔPQR, then ∠B= _____

63) If ΔABC ≅ ΔPQR, then ∠C= _____

64) If ΔABC ≅ ΔPQR, then PQ= _____

65) If ΔABC ≅ ΔPQR, then QR= _____

66) A cricket ball and a football are _____

67) In right angled ΔABC and ΔPQR, hypotenuse and one side is same in both triangles, then ΔABC .... ΔPQR

68) Sum of all interior angles of a triangle is ____

69) If ΔABC ≅ ΔPQR, ∠A=60^0 and ∠C=50^0, then find the value ∠Q. = ...

70) If △ABC - △DEF, then $\angle A$=_____

71) If △ABC - △DEF, then $\angle B$=_____

72) If △ABC - △DEF, then ∠C=_____

73) If △ABC - △DEF, then $\overline{AB}$=_____

74) If △PQR ≅ △BAC, then ∠A=_____ [∠P/∠Q]

75) If △ PQR ≅ △BAC, then $\overline{RQ}$=_____ [$\overline{CA}$/$\overline{AB}$]

76) If △ PQR ≅ △BAC, then ∠Q=_____ [∠B/∠A]

77) If △ PQR ≅ △BAC, then ∠R=_____ [∠C/∠B]

78) If ΔXYZ ≅ ΔGDF, then
Vertex X corresponds to vertex _____

79) If ΔXYZ ≅ ΔGDF, then
Side $\overline{YZ}$= Side_____

80) If ΔXYZ ≅ ΔGDF, then , $\angle ZYX$=_____

81) If ΔXYZ ≅ ΔGDF, then, $\angle ZXY$=_____

82) If $\triangle PQR \cong \triangle OMN$,then $\angle P$=_____

83) If $\triangle PQR \cong \triangle OMN$, then $\overline{QR}$=_____

84) If$\triangle PQR \cong \triangle OMN$, then,
The vertex Q corresponds to the vertex _____

85) If $\triangle PQR \cong \triangle OMN$, then $\overline{RP}$=_____

86) In ∠PQR, the included side between ∠P and ∠Q is _____

87) In ΔABC, the included angle between $\overline{AC}$ and $\overline{BC}$ is _____

88) In ΔBCD, the included side between ∠B and ∠D is _____

89) In ΔLMN, the included angle between MN and NL is _____

90) Two angles are said to be congruent, if they have _____ [equal measures/equal sides]

91) Two plane figure are congruent, if they have _____ [same shape/same shape and size]

92) Two line-segments are congruent, if they are _____to each other. [parallel/equal]

93) In ΔPQR, the side _____ is included between ∠Q and ∠R.[$\overline{PQ}$/$\overline{QR}$]

94) Two rectangles are congruent, if they have the same _____

95) Two circles are congruent, if they have the same_____

96) Two triangles are said to be congruent, if pairs of corresponding sides and the corresponding _____are equal

97) When two angles and the included side of one triangle are respectively equal to two angles and the included side of another triangle. This is called the_____ congruence of triangles

98) When two sides and the included angle of one triangle are respectively equal to two sides and the included angle of another triangle, the triangles are congruent. This is known as the _____ congruence of triangles

99) If the three sides of a triangle are respectively equal to the three sides of another triangle, the two triangles are congruent. This is called the _____congruence of triangles

15 x 1 = 15

100) If two triangles are equal in area, then they will be congruent

(a) True (b) False

101) If the hypotenuse of a right angled triangle is equal to the hypotenuse of another right angled triangle, then the triangles are congruent.

(a) True (b) False

102) If three angles of a triangle are equal to the corresponding angles of another triangle, then the triangles are congruent.

(a) True (b) False

103) If two legs of a right angled triangle are equal to two legs of another right angled triangle, then the right angled triangles are congruent.

(a) False (b) True

104) If two sides and one included angle of a triangle are equal to the two sides and one included angle of another triangle, then the two triangles are congruent.

(a) False (b) True

105) If two triangles are congruent, then the corresponding angles are equal.

(a) False (b) True

106) If two angles and a included side of a triangle are equal to two angles and a included side of another triangle, then the triangles are congruent.

(a) False (b) True

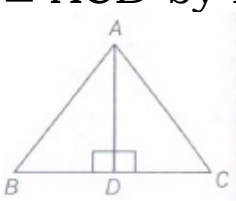
107) If hypotenuse and an acute angle of one right angled triangle are equal to the hypotenuse and an acute angle of another right angled triangle, then the triangles are congruent.

(a) False (b) True

108) AAS congruence criterion is same as ASA congruence criterion.

(a) True (b) False

109) In the adjoining figure, if AD $\perp$BC and AD is the bisector of $\angle$BAC. Then, ΔABO $\cong$ ACD by RHS



(a) False (b) True

110) In ΔABC and ΔPQR, AB =PQ, BC = QR and $\angle$B = $\angle$Q, then ΔABC $\cong$ ΔPQR by the SAS criterion.

(a) False (b) True

111) In ΔEFG and ΔLMN, if $\angle$E = $\angle$L, $\angle$F = $\angle$M and $\angle$G = $\angle$N, then ΔEFG = ΔLMN

(a) True (b) False

112) There are six elements in a triangle.

(a) False (b) True

113) In right angled ΔABC and ΔXYZ, where $\angle$B=90^0, and hypotenuse are equal then ΔABC $\cong$ ΔXYZ.

(a) True (b) False

114) If ΔABC is an isosceles triangle, where AB = AC and D is mid-point of BC, then ΔABD ≅ ΔACD.

(a) False (b) True

12 x 1 = 12

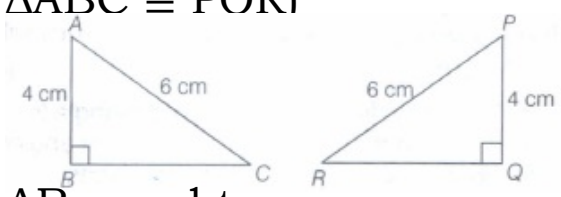
115) Which rule will be applied if two sides and one angle are equal. (1) if hypotenuse and a side of one triangle are correspondingly equal to hypotenuse and a side of another triangle

116) If all three sides are equal. (2) RHS

117) If two angles and one side are equal. (3) SSS rule

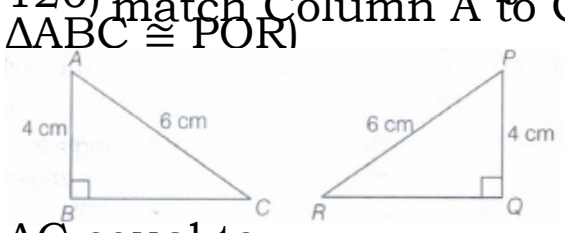
118) In two right angled triangles, hypotenuse and sides are equal. (4) ASA rule

119) On the basis of adjacent figures, match Column A to Column B (if ΔABC ≅ POR) (5) if their lengths are equal



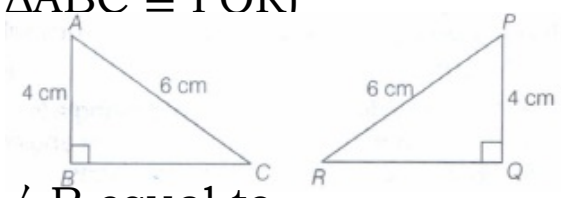
AB equal to

120) On the basis of adjacent figures, match Column A to Column B (if ΔABC ≅ POR) (6) SAS rule



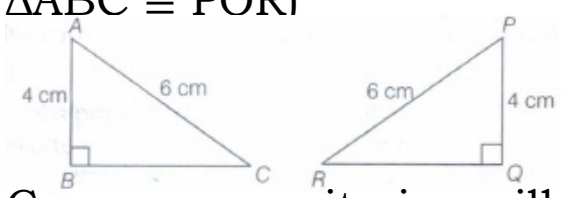
AC equal to

121) On the basis of adjacent figures, match Column A to Column B (if ΔABC ≅ POR) (7) ∠Q



∠B equal to

122) On the basis of adjacent figures, match Column A to Column B (if ΔABC ≅ POR) (8) PR



Congruence criterion will be

123) Two angles are congruent (9) RHS rule

124) Two squares are congruent (10) if their measures are equal.

125) Two right-angled triangles are congruent (11) if their sides are equal

126) Two line segments are congruent (12) PQ

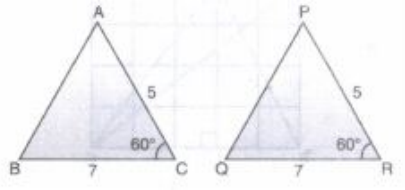
12 x 1 = 12

127) Write the pair of angles which are equal if ΔABC≅ΔPQR.

128) Write pair of sides which are equal if ΔABC≅ΔMYZ.

129) When can we say that two squares are congruent?

130) In the given figure which congruency criteria is used?



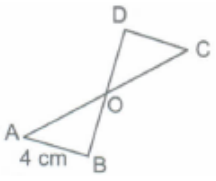
131) What should be same in two line segments to be congruent?

132) What should be same in two angles to be congruent?

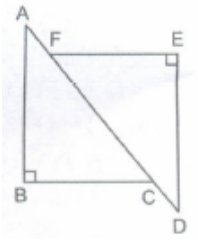
133) One side of a right triangle is equal to its corresponding side of another right triangle. Are the two triangles always congruent?

134) When do we call two squares congruent?

135) In the figure, if $\overline{AC}$ and $\overline{BD}$ are bisected at O then what is the length of CD?



136) In the figure, AF = CD, AB = ED. If AC = 5 cm, then what is the length of DF?



137) Two triangles ABC and DEF are congruent. If ∠A=70° and∠B=40°, then what is the measure of ∠F?

138) If ΔABC ≅ΔPQR and area ofΔABC is 15 sq.cm.,then what is the area of ΔPQR?

52 x 2 = 104

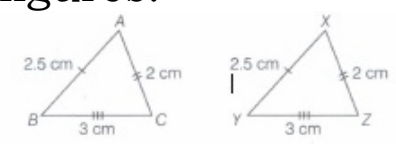
139) If ABC ≅ ΔPQRunder the corresponding ABC ↔ PQR. Write all the corresponding congruent part of the triangles.

140) If ΔDEF ≅ ΔPQR Write the part(s) of ΔPQR that corresponds to ∠F

141) If ΔDEF ≅ ΔPQR, then corresponding congruent part(s) of the triangle is ∠E

142) If ΔDEF ≅ ΔPQR, then corresponding congruent part(s) of the triangle is $\bar{EF}$.

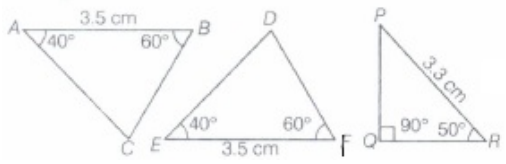
143) Use SSS congruence criterion for congruence of Δ ABC and Δ XYZ in the following figures.



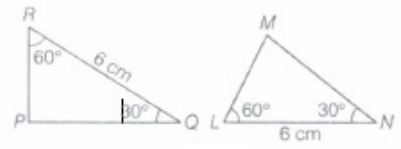
144) By applying SAS congruence rule, you want to establish that ΔPQR ≅ ΔFED. It is given that PQ = FE and RP= DF. What additional information is needed to establish the congruence?

145) What is the side included between the angles M and N of ΔMNP?

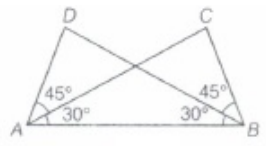
146) In the given figure, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



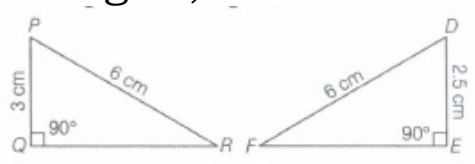
147) In the given figure, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



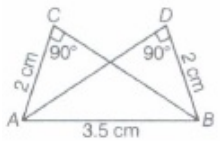
148) In the given figure, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



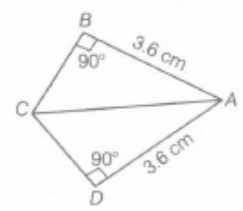
149) In the given figures, measures of some parts of triangles are given. By applying RHS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.



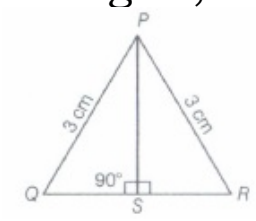
150) In the given figures, measures of some parts of triangles are given. By applying RHS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.



151) In the given figures, measures of some parts of triangles are given. By applying RHS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.

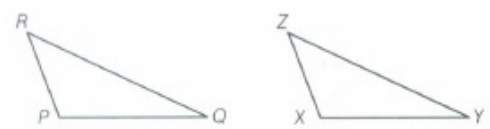


152) In the given figures, measures of some parts of triangles are given. By applying RHS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.

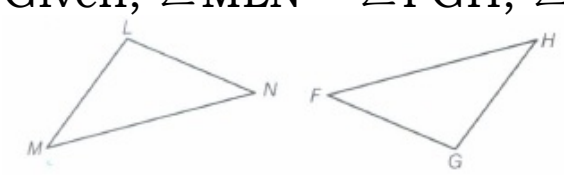


153) Which congruence criterion do you use in the following
Given, AC = DF, AB = DE, BC = EF
So, ΔABC ≅ ΔDEF

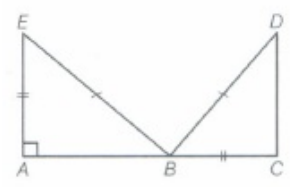
154) Which congruence criterion do you use in the following?
Given, ZX = RP, RQ = ZY, ∠PRQ = ∠XZY So, ΔPQR ≅ ΔXYZ



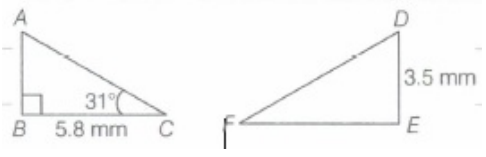
155) Which congruence criterion do you use in the following?
Given, ∠MLN = ∠FGH, ∠NML = ∠GFH, ML = FG So, ΔLMN ≅ ΔGFH



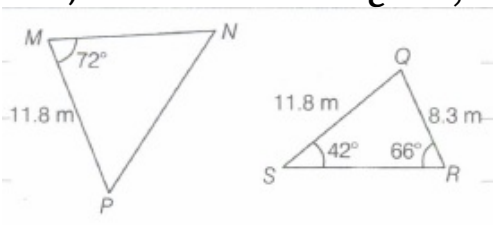
156) Which congruence criterion do you use in the following?
Given, EB = DB, AE = BC, ∠A = ∠C = 90° So, ΔABE ≅ ΔCDB



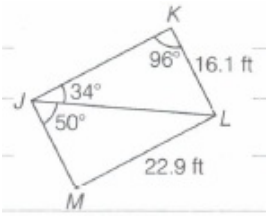
157) If ΔABC ≅ ΔDEF, then find the values of AB and m∠E.



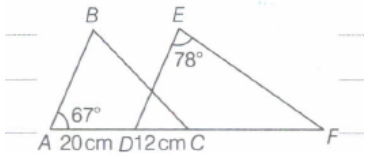
158) If ΔMNP ≅ ΔQRS, then find the values of MN and m∠P



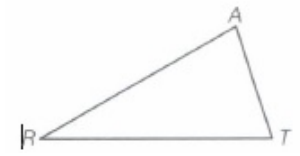
159) In the following figure, if ΔJKL ≅ ΔLMJ, then find the values of JK and m∠JLM.



160) In the following figure, if ΔABC ≅ ΔDEF, then find the values of DF and m∠EDC.

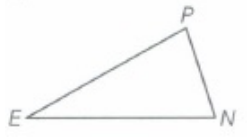


161) You want to show that ΔART ≅ ΔPEN.
If you have to use SSS criterion rule, then you need to show



a)AR =
(b) RT =
(c) AT=

162) You want to show that ΔART ≅ ΔPEN.
If it is given that ∠T = ∠N and you are to use SAS criterion rule, you need to have



(a) RT =
(b) PN =

163) If it is given that AT = PN and you are to use ASA criterion rule, you need to have
(a) ?
(b) ?

164) Give any two real life examples for congruent shapes.

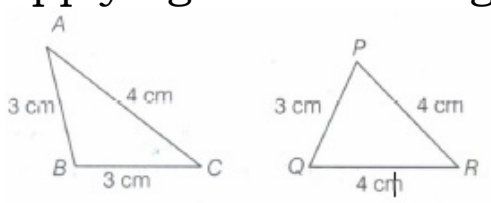
165) If Δ ABC ≅ ΔPOR under the correspondence ABC ↔ PQR write all the corresponding congruent parts of the triangles.

166) If Δ ABC ≅ ΔBCA Write the parts of ΔBCA that correspond to ∠Q

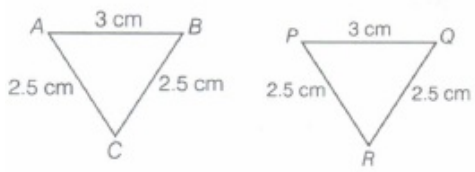
167) If Δ ABC ≅ ΔBCA Write the parts of ΔBCA that correspond to $\bar{QR}$.

168) In the following figures, lengths of the sides of the triangles are indicated. By applying the SSS congruence rule. State which pairs of triangle are congruent.

169) In the following figures, lengths of the sides of the triangles are indicated. By applying the SSS congruence rule. State which pairs of triangle are congruent.



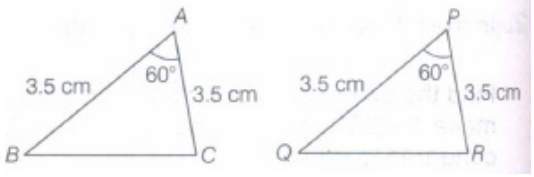
170) In the following figures, lengths of the sides of the triangles are indicated. By applying the SSS congruence rule. State which pairs of triangle are congruent.



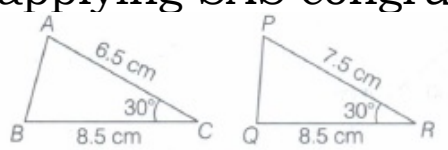
171) Which angle is included between the sides $\bar{DE}$ and $\bar{EF}$ of ΔDEF?

172) What is the side included between the ∠A and ∠B of ΔABC?

173) In the following figures, measures of some parts of the triangles are indicated. By applying SAS congruence rule, state the pair of congruent triangles .

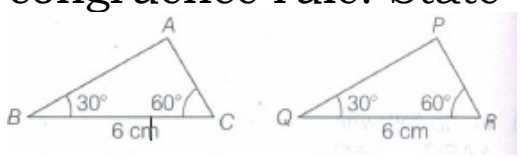


174) In the following figures, measures of some parts of the triangles are indicated. By applying SAS congruence rule, state the pair of congruent triangles.

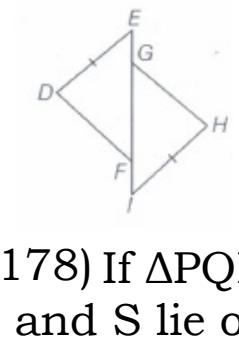


175) In the following figures, measures of same part are indicated. By applying ASA congruence rule. State which pairs of triangles are congruent.

176) In the following figures, measures of same part are indicated. By applying ASA congruence rule. State which pairs of triangles are congruent.

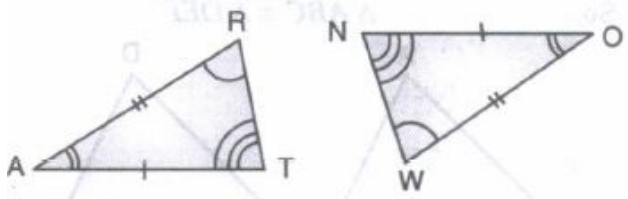


177) In the given figure, DE = IH, EG = FI and ∠E = ∠I. Is ΔDEF ≅ ΔHIG? If yes, by which congruence criterion?

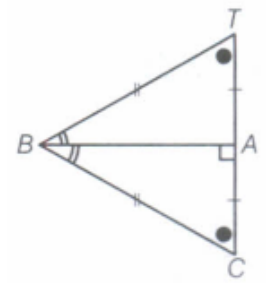


178) If ΔPQR and ΔSQR both are isosceles triangles on a common base QR such that P and S lie on the same side QR. Are ΔPSQ and ΔPSR congruent? Which condition do you use?

179) In the given figure, the two triangles are congruent. The corresponding parts are marked. We can write $\Delta RAT \cong$?

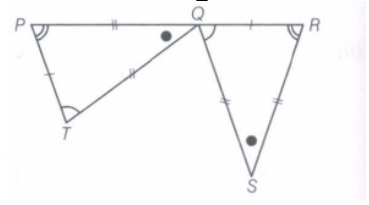


180) Complete the congruence statement.



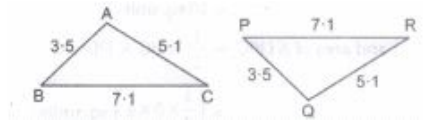
$\Delta BCA \cong$?

181) Complete the congruence statement.

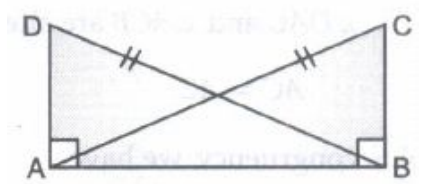


$\triangle QRS \cong ?$

182) In the given figure, two triangles ΔABC and ΔPQR are given. Examine whether the triangles are congruent.



183) In the given figure, DA⊥AB, CB⊥AB and AC=BD.

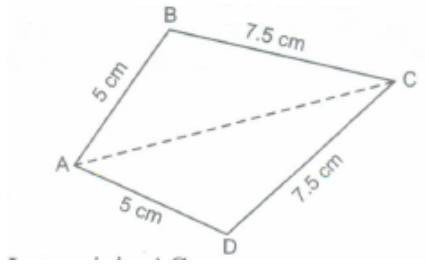


State the three pairs of equal parts in ΔABC and ΔBAD.

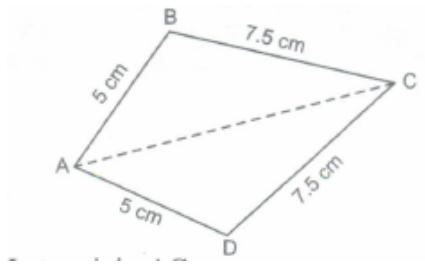
184) In an isosceles ΔABC,AB = AC. Show that angles opposite to the equal sides are equal.

185) In an isosceles ΔABC, show that the, bisector of its vertical angles bisects the base at right angles.

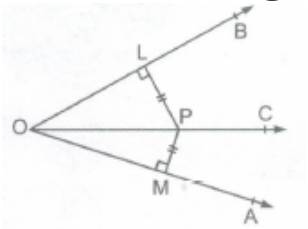
186) Look at the adjoining figure and show that
$\triangle ABC \cong \triangle ADC$



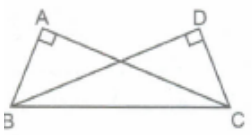
187) Look at the adjoining figure and show that
$\overline{AC}$ *bisects* $\angle BAD$



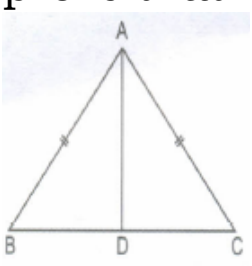
188) In the figure, PL ⊥OB and PM ⊥OA such that PL=PM. prove that △PLO≅△PMO.



189) In the figure, two right triangles ABC and DBC are right-angled at A and D respectively. The triangles are on the same base BC such that $\overline{AC} = \overline{BD}$. prove that $\triangle ABC \cong \triangle DCB$



190) ABC is an isosceles triangle having side $\overline{AB}$= side $\overline{AC}$. If AD is perpendicular to BC, prove that D is the mid-point of $\overline{BC}$



55 x 3 = 165

191) Can you say, the following objects are congruent or not?
(i) Shaving blades of the same company.
(ii) Sheets of the same letter-pad.
(iii) Biscuits in the same packet.
(iv) Toys made of the same mould.

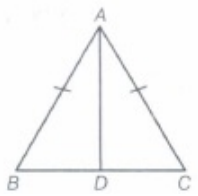
192) When two triangles, say ABC and PQR are given, there are in all, six possible matchings or correspondences. Two of them are
(i) ABC ↔ PQR (ii) ABC ↔ QRP
Find the other four correspondences by using two cut outs of triangles. Will all these correspondences lead to congruence?

193) Complete the following statements.
(i) Two line segments are congruent, if .
(ii) Among two congruent angles, one has a measure of 70°, the measure of the other angle is ……
(iii) When we write ∠A = ∠B, we actually mean ……

194) If ΔABC ≅ ΔFEDunder the correspondence ABC ↔ FED, then write all the corresponding congruent parts of the triangles.

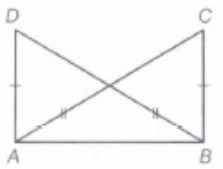
195) If ΔDEF ≅ ΔBCA, then write the part(s) of ΔBCA that correspond to
i) ∠E
(ii) $\bar{EF}$
(iii) ∠F
(iv) $\bar{DF}$

196) In the given figure, AB = AC and Dis the mid-point of $\bar{BC}$.



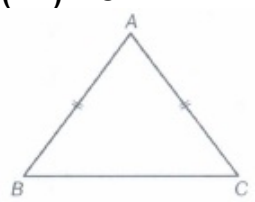
(i) State the three pairs of equal parts in ΔADB and ΔADC.
(ii) Is ΔADB ≅ ΔADC? Give reasons.
(iii) Is ∠B = ∠C? Why?

197) In the given figure, AC = BD and AD = BC. Which of the following statements is meaningfully written?

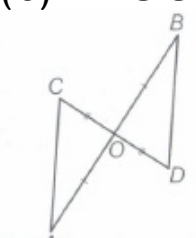


(i) ΔABC ≅ ΔABD
(ii) ΔABC ≅ ΔBAD

198) ABC is an isosceles triangle with AB = AC, take a trace-copy of ΔABC and also name it as ΔABC.
(i) State the three pairs of equal parts in ΔABC and ΔACB.
(ii) Is ΔABC ≅ ΔACB ? Why or why not?
(iii) Is ∠B = ∠C? Why or why not?

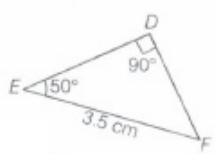


199) In the given figure, $\bar{AB}$ and $\bar{CD}$ bisect each other at O.
(i) State the three pairs of equal parts in two triangles AOC and BOD.
(ii) Which of the following statements are true?
(a) ΔAOC ≅ ΔDOB
(b) ΔAOC ≅ ΔBOD



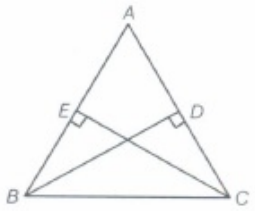
200) You want to establish ΔDEF ≅ ΔMNP, using ASA congruence rule. You are given that ∠D = ∠M and ∠F = ∠P. What information is needed to establish the congruence? (Draw a rough figure and then try)

201) In the given figure, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



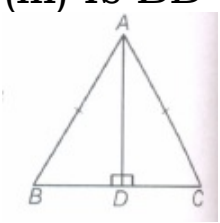
202) It is to be established by RHS congruence rule that ΔABC ≅ ΔRPQ. What additional information is needed, if it is given that ∠B = ∠P = 90° and AB = RP?

203) If the given figure, BD and CE are altitudes of ΔABC such that BD = CE.

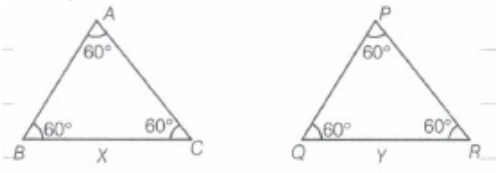


(i) State the three pairs of equal parts in ΔCBD and ΔBCE.
(ii) Is ΔCBD ≅ ΔBCE? Why or why not?
(iii) Is ∠DCB = ∠EBC? Why or why not?

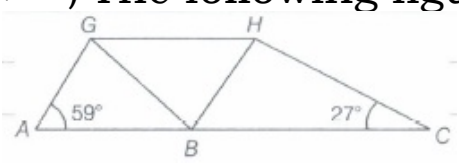
204) ABC is an isosceles triangle with AB = AC and AD is one of its altitudes (see the figure).
(i) State the three pairs of equal parts in ΔADB and ΔADC
(ii) Is ∠B = ∠C? Why or why not?
(iii) Is BD = CD? Why or why not?



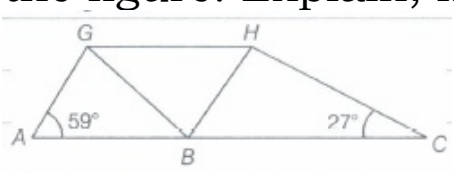
205) Is the two ΔABC and ΔPQR are congruent, while x≠y i.e., BC≠QR?



206) The following figure shows a portion of the truss of a bridge in which ΔABG ≅ ΔHGB.



207) To find the distance JK across a large rock formation, you locate points as shown in the figure. Explain, how to use this information to find JK.

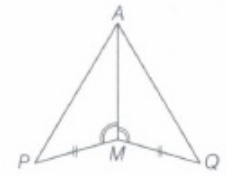


208) If ΔABC ≅ ΔDEF in which, AB = (3x + 7) un DE = (5x - 9) unit and BC = 4x unit.then find the value of x.

209) ΔPQR is congruent to ΔLMN, m∠P=7a, m∠L = (4a+15) and ∠P, ∠Q are complementary. Find the value of a.

210) If ΔDEF ≅ ΔGHJ and DF = 3x + 2, GJ = (6x -13) and HJ = 5x, then find the value of x and HJ.

211) You have to show that ΔAMP = ΔAMQ.

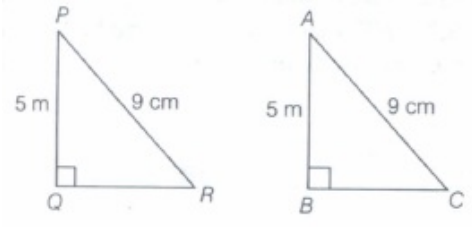


In the following proof, supply the missing reasons.

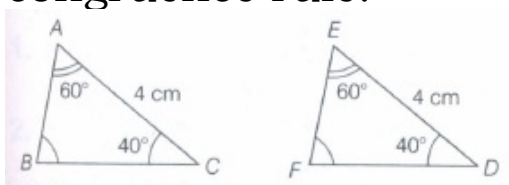
Steps	Reasons
(i) PM = QM	.....
(ii) ∠PMA = ∠QMA	.....
(iii) AM = AM	.....
(iv) ΔAMP ≅ ΔAMQ	.....

212) In ΔABC, ∠A = 30°, ∠B = 40° and ∠C = 110°. In ΔPQR, ∠P = 30°, ∠Q = 40° and ∠R = 110°. A student says that ΔABC ≅ ΔPQR by AAA congruence rule. ls he justified? Why or why not?

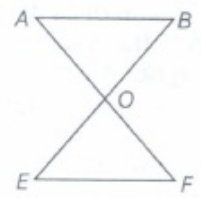
213) In the following figures, establish congruence by finding the correspondence.



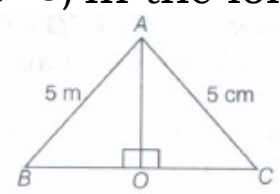
214) In the following figures, ∠A = ∠E and ∠C = ∠D.
Find the pair of corresponding parts, which make ΔABC and ΔEFD congruent by ASA congruence rule.



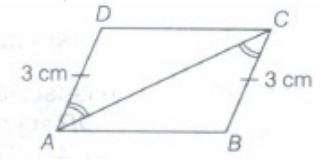
215) In the following figure, AB II EF and AB = EF. Prove that ΔAOB ≅ ΔEOF.



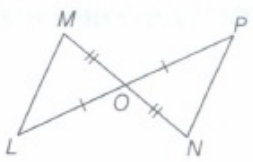
216) In the following figure, show that ΔABO ≅ ΔACO.



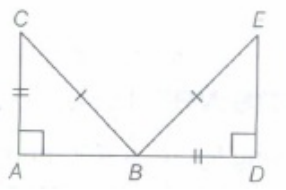
217) In the following figure, show that ΔADC ≅ ΔABC. if DC || AB.



218) In the following figure, identify the triangles that are congruent, by which property? Can we conclude that ML II NP?

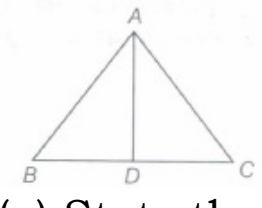


219) In the given figure, there are two triangles congruent? Name the congruent parts that are equal.



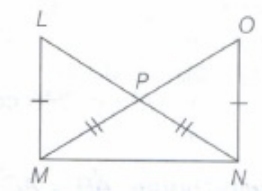
220) It is to be established by RHS congruence rule that ΔABC ≅RPQ. What additional information is needed, if it is given that ∠B =∠P = 90^0 and AB = RP?

221) ABC is an isosceles triangle with AB = AC and D is the mid-point of base BC in the following figure.



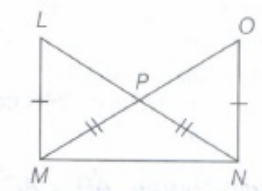
(a) State three pairs of equal parts in the ΔABD and ΔACD.
(b) Is ΔABD ≅ ΔACD? If so, why?

222) In following figure, it is given that LM = ON and NL = MO.



State the three pairs of equal parts in the ΔNOM and ΔMLN.

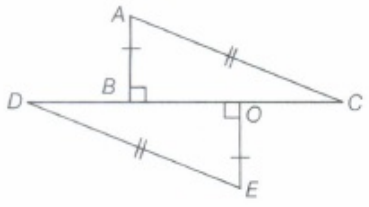
223) In following figure, it is given that LM = ON and NL = MO.



Is ΔNOM ≅ ΔMLN? Give reason.

224) ΔDEF and ΔLMN are both isosceles with DE = DF and LM = LN, respectively. If DE = LM and EF = MN, then are the two triangles congruent? Which condition do you use? If ∠E = 40°, what is the measure of ∠N?

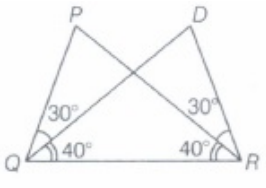
225) In the given figure, state the three pairs of equal parts in ΔABC and ΔEGO. Is ΔABC ≅ ΔEOD? Why?



226) If ΔABC ≅ ΔRPQ, ∠A= 60°, ∠B = 50°, then find ∠P, ∠Q and ∠R.

227) ΔABC ≅ ΔDEF such that AB = DE, AC = DF and BC = EF. Find x and y on the basis of data provided in the given figures.

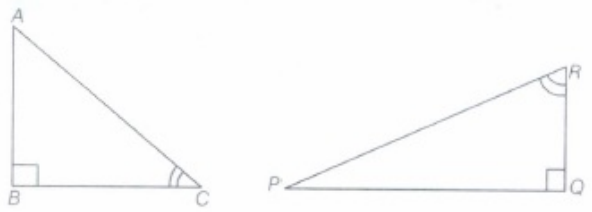
228) In the following figure, show that ΔPQR ≅ ΔDQR



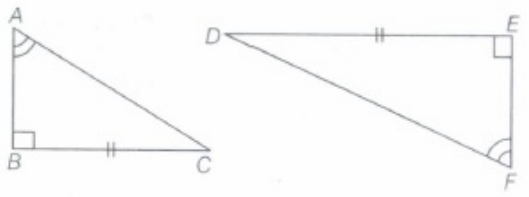
229) In a squared sheet, draw two triangles of equal areas such that, the triangles are congruent.

230) In a squared sheet, draw two triangles of equal areas such that, the triangles are not congruent. What can you say about their perimeters?

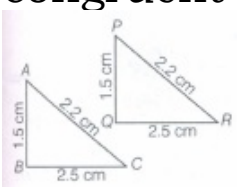
231) If ΔABC and ΔPQR are to be congruent, name one additional pair of corresponding parts. What criterion did you use?



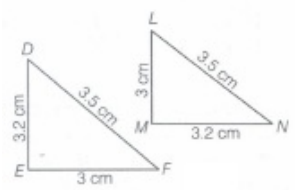
232) Explain, why ΔABC ≅ ΔFED.



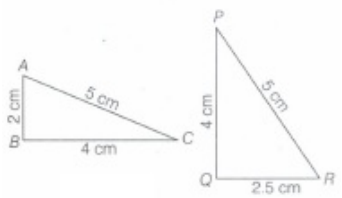
233) In the following figures, lengths of the sides of the triangles are indicated. By applying SSS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.



234) In the following figures, lengths of the sides of the triangles are indicated. By applying SSS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.



235) In the following figures, lengths of the sides of the triangles are indicated. By applying SSS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.

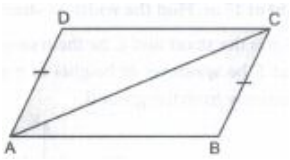


236) In the following figures, lengths of the sides of the triangles are indicated. By applying SSS congruence rule, state which pairs of triangles are congruent? In case of congruent triangles, write the result in symbolic form.

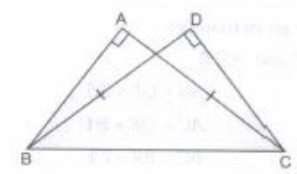
237) If $\triangle ABC \cong \triangle PQR$, then write components of $\triangle$ PQR that correspond to
(a)BC
(c) AC
(b) $\angle$C
(d)$\angle$B

238) In the given figure, ΔABC is an isosceles triangle in which AB = AC. If AB and AC are produced to D and E respectively such that BD = CE. Prove that BE = CD.

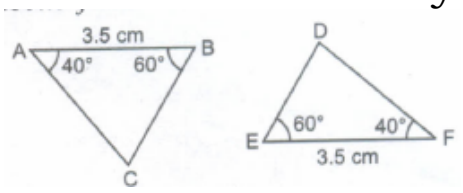
239) In the given figure, AD = BC and AD II BC. Is AB = DC? Give reasons to support your answer.



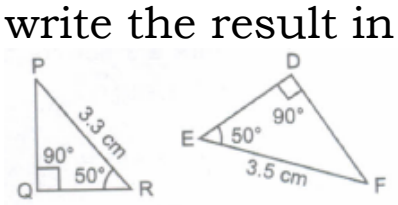
240) In the given figure, triangles ΔABC and ΔBCD are right angled at A and D respectively. Prove that ΔABC≅ΔDCB.
Is AB = DC ? give reason.



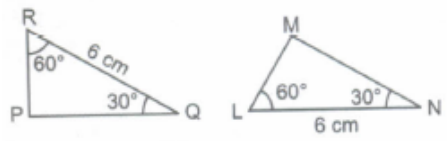
241) In the following figures, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent. In case of congruence, write the result in symbolic form.



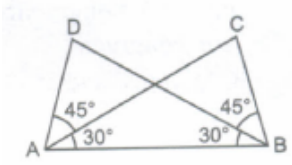
242) In the following figures, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent. In case of congruence, write the result in symbolic form.



243) In the following figures, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent. In case of congruence, write the result in symbolic form.



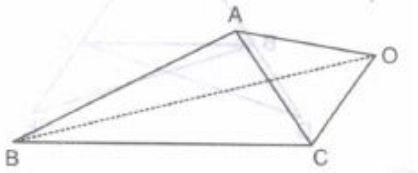
244) In the following figures, measures of some parts are indicated. By applying ASA congruence rule, state which pairs of triangles are congruent. In case of congruence, write the result in symbolic form.



245) Given below are measurements of some parts of two triangles. Examine whether the two triangles are congruent or not using RHS congruence rule. Write the result in symbolic form.
In ΔABC:$\angle$B=90°, AC = 8 cm, AB = 4 cm
In ΔPQR:$\angle$P=90°, PR = 4 cm, QR = 8 cm

4 x 4 = 16

246) If O is a point in the exterior of ΔABC. Show that:
2(OA + OB + oq > (AB + BC + CA).



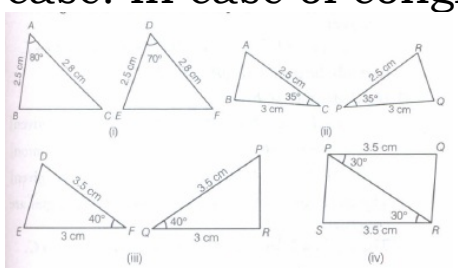
247) A ladder 17 m long reaches a window which is 8m above the ground on one side of street. Keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window at a height of 15 m. Find the width of street.

248) Two poles of height 9 m and 14m stand upright on a plane ground. If the distance between their tops is 13 m, find the distance between their feets.

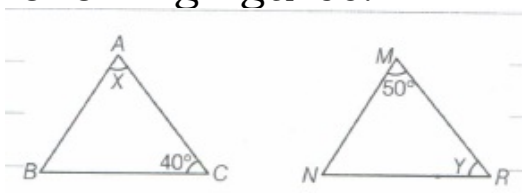
249) Look at the adjoining figure. Can you use ASA congruence rule and conclude that ΔAOC ≅ ΔBOD?

27 x 5 = 135

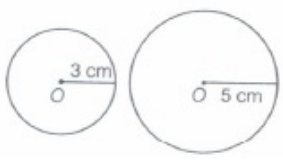
250) In the following figures, measures of some parts of the triangles are indicated. By applying SAS congruence rule, state the pairs of congruent triangles, if any, in each case. In case of congruent triangles, write them in symbolic form.



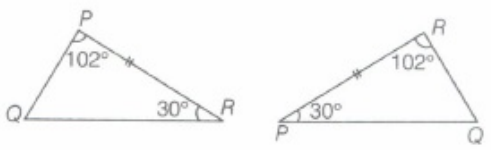
251) If ΔABC ≅ ΔMNR, then find the value of (2x+3y), where x and y shown in the following figures.



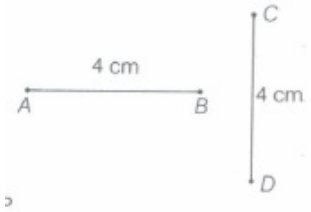
252) Which of the following pair of figures are congruent?



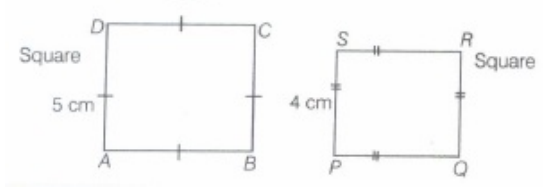
253) Which of the following pair of figures are congruent?



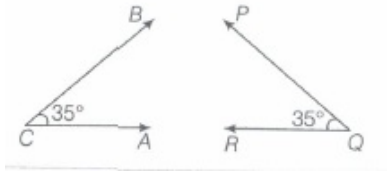
254) Which of the following pair of figures are congruent?



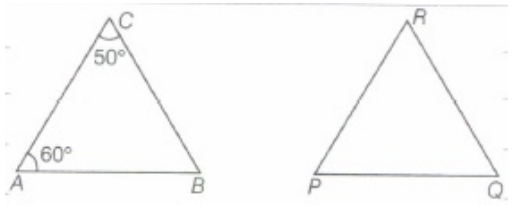
255) Which of the following pair of figures are congruent?



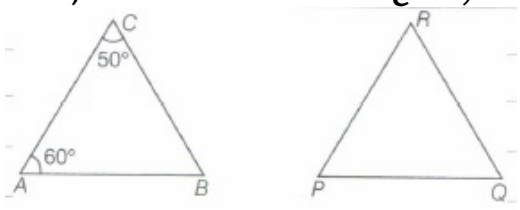
256) Which of the following pair of figures are congruent?



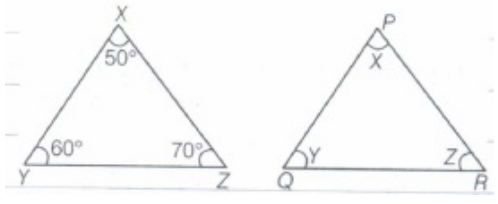
257) If $\Delta ABC \cong \Delta PQR$, where $\angle A=(3x-10)$ and $\angle P=(x+50)$, then the value of $\angle C$, where $\angle C=x$.



258) If $\Delta ABC \cong \Delta PQR$, $\angle A=60^0$ and $\angle C=50^0$, then find the value of $\angle Q$.

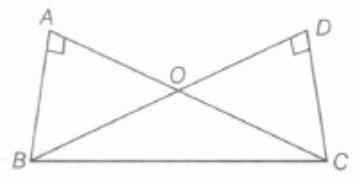


259) Calculate the value of (x + y + z) , if $\Delta XYZ \cong \Delta PQR$.

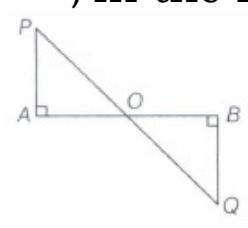


260) Is the perimeter of two congruent triangles is equal? Justify your answer.

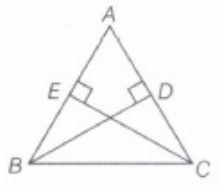
261) In the following figure, ΔABC and ΔDCB are right angled at A and D respectively and AC = DB. Prove that $\Delta ABC \cong \Delta DCB$.



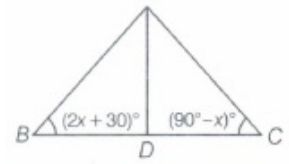
262) In the following figure, PA $\perp$ AB, QB $\perp$ AB and PA = OB. Prove that $\Delta OAP \cong \angle OBQ$.



263) In the adjacent figure, ABC is a triangle and BD, CE are perpendicular to AC and AB respectively. If BD = CE, find the three pairs of corresponding parts, which make $\Delta BCD \cong \Delta CBE$ by RHS congruence criterion.



264) In the following figure, AB = AC and D is the mid-point of $\bar{BC}$. State the three pairs of equal parts in ΔADB and ΔADC. Is $\Delta ADB \cong \Delta ADC$? Is $\angle B = \angle C$? Also find value of x.



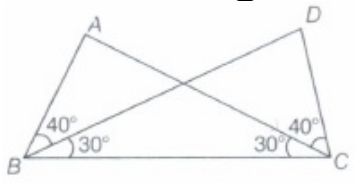
265) A chocolate is in the form of a quadrilateral with sides 6 cm, 10 cm, 5 cm and 5 cm. It is cut into two parts along one of its diagonals by a lady. Part I is given to her maid and part II is equally divided among her driver and maid.
Use congruence of triangle rule and cheek is this distribution fair or not.

266) A chocolate is in the form of a quadrilateral with sides 6 cm, 10 cm, 5 cm and 5 cm. It is cut into two parts along one of its diagonals by a lady. Part I is given to her maid and part II is equally divided among her driver and rnali.
What value is depicted by lady in distribution of chocolate in two parts?

267) State which of the following pairs of triangles are congruent? If yes, write them in symbolic form (you may draw a rough figure).
ΔPQR : PQ = 3.5 cm, QR = 4.0 cm, $\angle Q = 60^0$ ΔSTU : ST =3.5 cm, TU = 4 cm; $\angle T = 60^0$

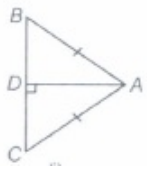
268) State which of the following pairs of triangles are congruent? If yes, write them in symbolic form (you may draw a rough figure).
ΔABC : AB = 3.5 cm, , $\angle A = 90^0$, AC = 6.8 cm. ΔXYZ : YZ =6.8 cm, $\angle X = 90^0$, ZX = 4.8 cm

269) In the given figure, state the three pairs of equal parts in ΔABC and ΔDCB.

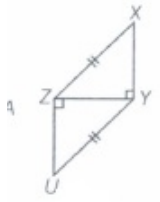


(i) Is ΔABC ≅ ΔDCB? Why?
(ii) Is AB = DC ? Why?
(iii) Is AC = DB? Why?

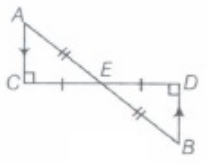
270) In each of the given pairs of triangles of figure using only RHS congruence rule. Determine which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



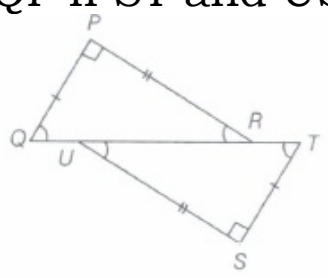
271) In each of the given pairs of triangles of figure using only RHS congruence rule. Determine which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



272) In each of the given pairs of triangles of figure using only RHS congruence rule. Determine which pairs of triangles are congruent? In case of congruence, write the result in symbolic form.



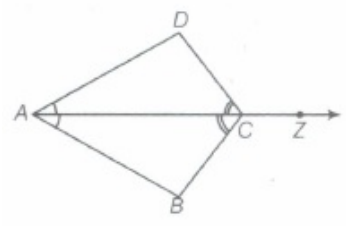
273) In the given figure, ΔPQR is a right angled at P, V and T are the points on line QRT, if QP II ST and US II RP, find ∠S.



274) Given below are measurements of some parts of two triangles. Examine whether the two triangles are congruent or not, by ASA congruence rule. In case of congruence, write it in symbolic form.

ΔDEF	ΔPQR
(i) $\angle D=60^0$, $\angle F=80^0$, DF = 5 cm	$\angle Q=60^0$, $\angle R=80^0$, QR=5 cm
(ii) $\angle D=60^0$, $\angle F=80^0$, DF=6 cm	$\angle Q=60^0$, $\angle R=80^0$, QP=6 cm
(iii) $\angle E=80^0$, $\angle F=30^0$, EF=5 cm	$\angle P=80^0$, PQ=5 cm, $\angle R=30^0$

275) In the given figure, ray AZ biscets ∠DAB as well as ∠DCB.
(i) State the three pairs of equal parts in ΔBAC and ΔDAC
(ii) Is ΔBAC ≅ ΔDAC? Give reasons.
(iii) Is AB = AD? Justify your answer
(iv) Is CD = CB? Give reasons.



276) Draw a rough sketch of two triangles such that they have three pairs of congruent parts but still the triangles are not congruent.

****