

CBSE Worksheet-1
CLASS –VII Mathematics (Congruence of Triangles)

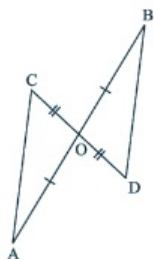
Choose correct option in questions 1 to 4.

1. $\triangle ABC$ and $\triangle PQR$ are congruent under the correspondence $ABC \leftrightarrow RQP$
Write the parts of $\triangle ABC$ that correspond to RQ .
 - a. AB
 - b. BC
 - c. AC
 - d. none of these
2. Which angle is included between the sides DE and EF of $\triangle DEF$?
 - a. $\angle D$
 - b. $\angle E$
 - c. $\angle F$
 - d. none of these
3. By applying SAS congruence rule, you want to establish that $\triangle PQR \cong \triangle FED$. It is given that $PQ = FE$ and $RP = DF$. What additional information is needed to establish the congruence?
 - a. $\angle P = \angle D$
 - b. $\angle Q = \angle D$
 - c. $\angle P = \angle F$
 - d. $\angle R = \angle F$
4. Which congruence criterion do you use in the following?
Given: $AC = DF$, $AB = DE$, $BC = EF$. So, $\triangle ABC \cong \triangle DEF$
 - a. ASA rule
 - b. SAS rule
 - c. RHS rule
 - d. SSS rule

Fill in the blanks:

5. If two-line segments have the _____ length, they are congruent.
6. If two triangles are congruent, then their _____ parts (i.e., angles and sides) that match one another are equal.

7. In an isosceles triangle base angles opposite to the equal sides are _____.
8. The side opposite to the right angle is called the _____ of the right-angled triangle.
9. In triangles ABC and PQR, $AB = 3.5$ cm, $BC = 7.1$ cm, $AC = 5$ cm, $PQ = 7.1$ cm, $QR = 5$ cm and $PR = 3.5$ cm. Examine whether the two triangles are congruent or not. If yes, write the congruence relation in symbolic form.
10. In the following figure, AB and CD bisect each other at O. State the three pairs of equal parts in two triangles AOC and BOD.



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Answer key

1. c

Explanation: Since $ABC \leftrightarrow RQP$ is the correspondence of triangles $\triangle ABC$ and $\triangle PQR$,
We can say that $AB \leftrightarrow RQ$

2. b

Explanation: The vertex common to the sides DE and EF is E . Hence the included angle is $\angle E$.

3. c

Explanation: By SAS congruence rule, two triangles are congruent if two sides and the angle included between them of a triangle are equal to two corresponding sides and the angle included between them of another triangle.

Here Given that $PQ = FE$ and $RP = DF$, the angle included these two sides are $\angle P$ and $\angle F$.
Hence $\angle P = \angle F$.

4. d

Explanation: Since the three sides of the one triangle is equal to the corresponding sides of the other triangle, as per the SSS congruence criterion is used here.

5. equal

6. corresponding

7. equal

8. hypotenuse

9. Yes $\triangle ABC \cong \triangle RPQ$ by SSS Congruency

Explanation: The sides of the triangle ABC are AB, BC, AC and that of triangle PQR are PQ, QR, PR

Given that, $AB = PR = RP = 3.5\text{cm}$

$BC = PQ = 7.1\text{cm}$

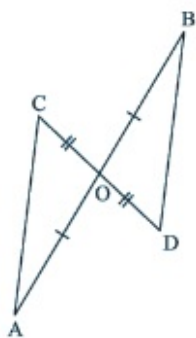
$AC = RQ = 5\text{cm}$

Hence by SSS congruency rule, since the three sides are equal the triangles ABC and RPQ are congruent

$\triangle ABC \cong \triangle RPQ$.

10. $AO = BO, OC = OD$ and $\angle AOC = \angle BOD$ (vertically opposite angle)

Explanation:



Since AB and CD bisect each other at O, $AO = BO$ and $OC = OD$. Since $\angle AOC$ and $\angle BOD$ are vertically opposite angles formed by the intersection of the line segments AB and CD, $\angle AOC = \angle BOD$

Hence equal parts of the two triangles AOC and BOD are
 $AO = BO$, $OC = OD$ and $\angle AOC = \angle BOD$.