



MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

CONGRUENCE

Others

1. Explain the concept of congruence of figures with the help of certain examples.

[Watch Video Solution](#)

2. Fill in the blanks: Two line segments are congruent if.....

Two angles are congruent if.....

[Watch Video Solution](#)

3. Fill in the blanks: Two square are congruent if

Two rectangles are congruent if

Two circles are congruent if



Watch Video Solution

4. In Fig.6, $\angle POQ \cong \angle ROS$, can we say that $\angle POR \cong \angle QOS$



Watch Video Solution

5. In Fig.7, $a = b = c$, name the angle which is congruent to $\angle AOC$



Watch Video Solution

6. Is it correct to say that any two right angles are congruent? Give reasons to justify your answer.



Watch Video Solution

7. In Fig.8, $\angle AOC \cong \angle PYR$ and $\angle BOC \cong \angle QYR$. Name the angle which is congruent to $\angle AOB$.



Watch Video Solution

8. Which of the following statements are true and which are false;

All squares are congruent.

If two squares have equal areas, they are congruent.

If two rectangles have equal areas, they are congruent.

If two triangles have equal areas, they are congruent.



Watch Video Solution

9. Without drawing the triangles, state the correspondence between the sides and the angles of the following pairs of congruent triangles: (a) $ABC \cong PQR$ (b) $ABC \cong QRP$

[Watch Video Solution](#)

10. In the following pairs of triangle (Fig.10), by applying SSS condition, state which are congruent. State the result in symbolic form:

[Watch Video Solution](#)

11. Which of the following pairs of triangles are congruent? If they are congruent, write out the pairs of equal angles.

$ABC: AB = 3\text{ cm}, BC = 4\text{ cm}, CA = 2\text{ cm}$

$DEF: DE = 2\text{ cm}, EF = 3\text{ cm and } FD = 4\text{ cm}$

$PQR: PQ = 17\text{ cm}, QR = 15\text{ cm}, PR = 18\text{ cm}$

$DEF: DE = 18\text{ cm}, EF = 17\text{ cm}, DF = 15\text{ cm} .$

[Watch Video Solution](#)

12. In Fig.11, it is given that $AB = CD$ and $AD = BC$. Prove that $ADC \cong CBA$.



[Watch Video Solution](#)

13. In the following pairs of triangle (Fig. 12 to 15), the lengths of the sides are indicated along sides. By applying SSS condition, determine which are congruent. State the result in symbolic form.



[Watch Video Solution](#)

14. In Fig,16, $AD = DC$ and $AB = BC$

(i) Is $\triangle ABD \cong \triangle CBD$?

(ii) State the three parts of matching pairs you have used to answer (i).



[Watch Video Solution](#)

15. In Fig,16, $AD = DC$ and $AB = BC$

(i) Is $\triangle ABD \cong \triangle CBD$?

(ii) State the three parts of matching pairs you have used to answer (i).



[Watch Video Solution](#)

16. In $\triangle PQR \cong \triangle EFD$, Which side of $\triangle PQR$ equals ED ? Which angle of $\triangle PQR$ equals $\angle E$?



Watch Video Solution

17. Triangles ABC and PQR are both isosceles with $AB = AC$ and $PQ = PR$ respectively. If also, $AB = PQ$ and $BC = QR$, are the two triangles congruent? Which condition do you use? If $\angle B = 50^\circ$, what is the measure of $\angle R$?



Watch Video Solution

18. ABC and DBC are both isosceles triangles on a common base BC such that A and D lie on the same side of BC . Are triangles ADB and ADC congruent? Which condition do you use? If $\angle BAC = 40^\circ$ and $\angle BDC = 100^\circ$; then find $\angle ADB$

[Watch Video Solution](#)

19. $\triangle ABC$ and $\triangle ABD$ are on a common base AB , and $AC = BD$ and $BC = AD$ as shown in Fig. 18. Which of the following statements is true? $\triangle ABC \cong \triangle ABD$ $\triangle ABC \cong \triangle ADB$ $\triangle ABC \cong \triangle BAD$

[Watch Video Solution](#)

20. In Fig.19, $\triangle ABC$ is isosceles with $AB = AC$, D is the mid-point of base BC . Is $\triangle ADB \cong \triangle ADC$? State the three pairs of matching parts you use to arrive at your answer.

[Watch Video Solution](#)

21. In figure.20, $\triangle ABC$ is isosceles with $AB = AC$. State if $\triangle ABC \cong \triangle ACB$. If yes, state three relations that you use to arrive at your answer.



Watch Video Solution

22. Triangles ABC and DBC have side BC common, $AB = BD$ and $AC = CD$. Are the two triangles congruent? State in symbolic form. Which congruence condition do you use? Does $\triangle ABD$ equal $\triangle ACD$? Why or why not?



Watch Video Solution

23. In each of the following pairs of triangles the measure of some parts are indicated along. Side. By the application of SAS congruence condition, state which are congruent. State the result in symbolic form.



Watch Video Solution

24. Which of the following pairs of triangles are congruent?

$ABC: AB = 2\text{ cm}, AC = 4\text{ cm}, \angle A = 40^\circ$; $XYZ: XZ = YZ = 4, \angle Z = 40^\circ$
 $PQR: PQ = 5\text{ cm}, PR = 6\text{ cm}, \angle P = 55^\circ$; $DEF: DE = 6\text{ cm}, EF = 5\text{ cm}, \angle E = 55^\circ$



[Watch Video Solution](#)

25. Show that in an isosceles triangle, angles opposite to equal sides are equal.



[Watch Video Solution](#)

26. Show that the bisector of vertical angle of an isosceles triangle bisects the base at right angles.



[Watch Video Solution](#)

27. In ABC , $\angle A = 100^\circ$ and $AB = AC$. Find $\angle B$ and $\angle C$.



[Watch Video Solution](#)

28. In Fig.26, $AB = AC$ and $\angle ACD = 120^\circ$. Find $\angle A$.

[Watch Video Solution](#)

29. Prove that measure of each of an equilateral triangle is 60°

[Watch Video Solution](#)

30. Line-segments AB and CD bisect each other at O . AC and BD are joined forming triangles AOC and BOD . State the three equality relations between the parts of the two triangles that are given or otherwise known. Are the two triangles congruent? State in symbolic form, which congruence condition do you use?

[Watch Video Solution](#)

31. $\triangle ABC$ is isosceles with $AB = AC$. Line segment AD bisects $\angle A$ and meets the base BC at D . Is $\triangle ADB \cong \triangle ADC$? State the three pairs of matching parts used to answer (i). Is it true to say that $BD = DC$?



Watch Video Solution

32. In Fig.31, $AB = AD$ and $\angle BAC = \angle DAC$ State in symbolic form the congruence of two triangles ABC and ADC that is true. Complete each of the following, so as to make it true: $\triangle ABC \triangle ACD$ Line segment bisects ____ and ____



Watch Video Solution

33. In figure, $AB \parallel DC$ and $AB = DC$. (i) Is $\triangle ACD \cong \triangle CAB$? (ii) State the three pairs of matching parts used to answer (iii) Which angle is equal to $\angle CAD$? (iv) Does it follow from (iii) that $AD \parallel BC$?



Watch Video Solution

34. Fig.33, the measure of some parts are indicated along side. By applying ASA congruence condition, state whether they are congruent. State the answer in symbolic form.



Watch Video Solution

35. Which of the following pairs of triangle are congruent?

$ABC: AB = 10\text{ cm}, \angle A = 40^\circ, \angle B = 55^\circ; XYZ: XY = 10, \angle Y = 40^\circ,$

$PQR: PR = 5\text{ cm}, \angle P = 37^\circ, \angle R = 64^\circ; DEF: DE = 5\text{ cm}, \angle D = 37^\circ$



Watch Video Solution

36. Which of the following pairs of triangle are congruent by ASA condition?



Watch Video Solution

37. In Fig.37, AD bisects $\angle A$ and $AD \perp BC$. Is $\triangle ADB \cong \triangle ADC$?

State the three pairs of matching parts you have used in (i) Is it true to say that $BD = DC$?



Watch Video Solution

38. Draw any triangle ABC . Use ASA condition to construct another triangle congruent to it.



Watch Video Solution

39. In $\triangle ABC$, it is known that $\angle B = \angle C$. Imagine you have another copy of $\triangle ABC$. Is $\triangle ABC \cong \triangle ACB$? State the three pairs of matching parts you have used to answer (i). Is it true to say that $AB = AC$?



Watch Video Solution

40. In Fig.38, AX bisects $\angle BAC$ as well as $\angle BDC$. State the three facts needed to ensure that $\triangle ABD \cong \triangle ACD$



Watch Video Solution

41. In Fig.39, $AO = OB$ and $\angle A = \angle B$. (i) Is $\triangle AOC \cong \triangle BOD$? (ii) State the matching pair you have used, which is not given in the question. (iii) Is it true to say that $\angle ACO = \angle BDO$?



Watch Video Solution

42. In each of the following pairs of right triangles, the measure of some parts are indicated along side. State by the application of RHS congruence condition which are congruent. State each result in symbolic form.



Watch Video Solution

43. In Fig.42, $PL \perp OB$ and $PM \perp OA$ such that $PL = PM$. Is $\triangle PMO$? Give reason in support of your answer.



Watch Video Solution

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



[Watch Video Solution](#)

45. In Fig.44, it is given that $LM = MN$, $QM = MR$, $ML \perp PQ$ and $MN \perp PR$. Prove that $PQ = PR$.



[Watch Video Solution](#)

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



[Watch Video Solution](#)

47. In each of the following pairs of right triangles, the measure of some parts are indicated along side. State by the application of RHS

congruence condition which are congruent. State each result in symbolic form.



Watch Video Solution

48. $\triangle ABC$ is isosceles with $AB = AC$. AD is the altitude from A on BC . Is $\triangle ABD \cong \triangle ACD$? State the pairs of matching parts you have used to answer (i). Is it true to say that $BD = DC$?



Watch Video Solution

49. $\triangle ABC$ is isosceles with $AB = AC$. Also, $AD \perp BC$ meeting BC in D . Are the two triangles ABD and ACD congruent? State in symbolic form. Which congruence condition do you use? Which side of $\triangle ADC$ equals BD ? Which angle of $\triangle ADC$ equals $\angle B$?



Watch Video Solution

50. Draw a right triangle ABC . Use RHS condition to construct another triangle congruent to it.



Watch Video Solution

51. In Fig.47, BD and CE are altitudes of $\triangle ABC$ and $BD = CE$. Is $\triangle BCD \cong \triangle CBE$? State the three pairs or matching parts you have used to answer (i)



Watch Video Solution