

Geometry - Congruent Triangles and Rigid Motions - Quiz

Common Core G-CO.B.7, G-CO.B.8 · maths-pdf.fr/en/

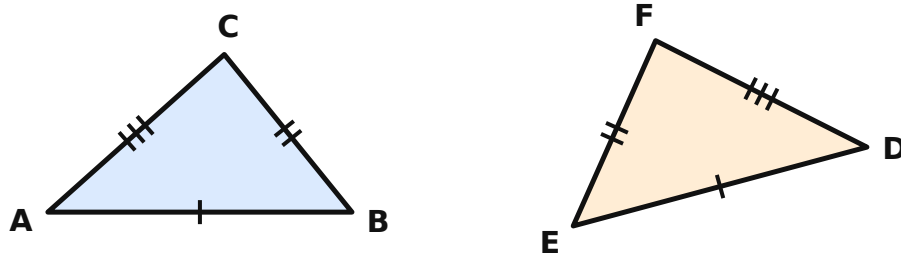
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of congruent triangles with this 10-question multiple-choice quiz. Each question has one correct answer, and the explanation after it names the typical mistake behind the wrong choices. Take it after the lesson or before the test.

Geometry · Common Core State Standards: **G-CO.B.7, G-CO.B.8**

Questions

Question 1



SSS: three pairs of congruent sides.

Which test proves that the two triangles are congruent?

- A. SSS
- B. SAS
- C. AAS
- D. HL

Question 2

Triangle ABC is congruent to triangle PQR. Which side corresponds to AB?

- A. QR
- B. PR
- C. AC

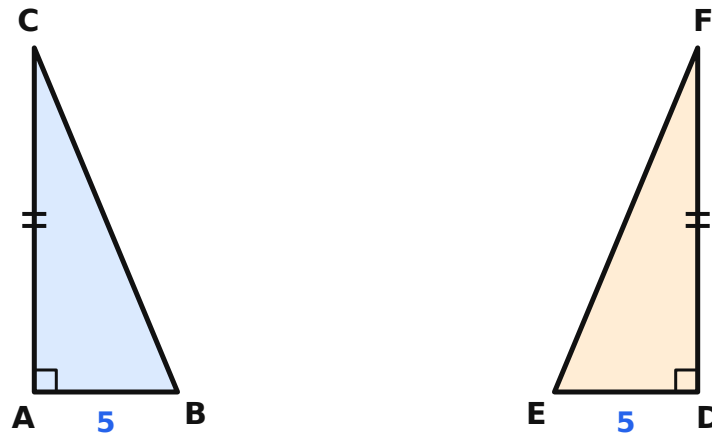
D. PQ

Question 3

Which test is NOT a valid way to prove triangles congruent?

- A. SAS
- B. ASA
- C. AAS
- D. SSA

Question 4



HL: right triangles with congruent hypotenuse and a congruent leg.

The right triangles have congruent hypotenuses and one congruent leg. Which test applies?

- A. SSS
- B. HL
- C. ASA
- D. AAA

Question 5

In triangles ABC and DEF, $AB = DE$, $BC = EF$ and the angle at B equals the angle at E. Which test applies?

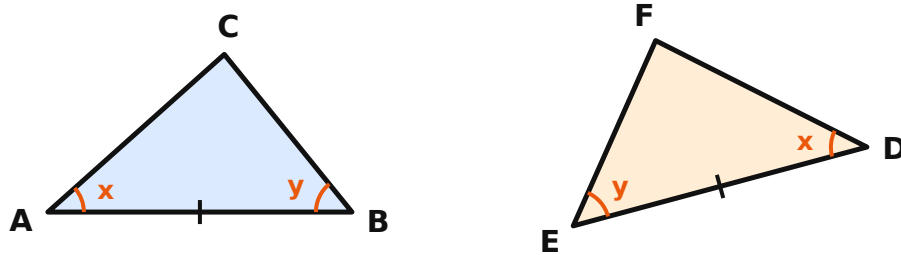
- A. SAS
- B. SSA
- C. ASA
- D. SSS

Question 6

Triangle ABC is congruent to triangle DEF. If $m \angle A = (2x + 10)$ degrees and $m \angle D = 50$ degrees, what is x ?

- A. 40
- B. 20
- C. 25
- D. 10

Question 7



ASA: two angles and the side between them.

Two angles and the side between them are marked congruent. Which test applies?

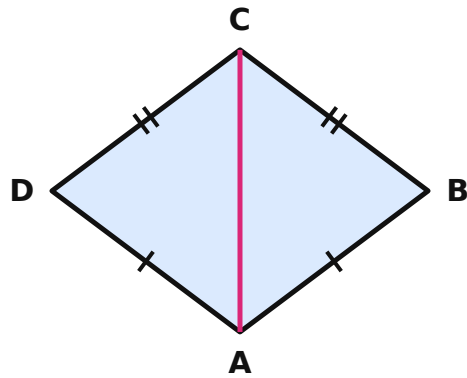
- A. AAS
- B. ASA
- C. SAS
- D. SSS

Question 8

Why is AAA not a congruence test?

- A. Triangles with the same angles always have different shapes
- B. Angles are never equal in two triangles
- C. Triangles can have the same angles but different sizes
- D. AAA only works for right triangles

Question 9



In the kite, $AB = AD$ and $CB = CD$. After proving the triangles congruent by SSS, which angles are congruent by CPCTC?

- A. Angle A and angle C
- B. Angle BAC and angle BCA
- C. Angle B and angle D
- D. Angle B and angle C

Question 10

Two ladders are 15 feet long and each is 9 feet from a wall. How do you know they reach the same height?

- A. The right triangles are congruent by HL
- B. They are congruent by AAA
- C. They are congruent by SSA
- D. Ladders always reach the same height

Answers

1. **A** – All three pairs of sides are marked congruent. SAS would need an angle.
2. **D** – Vertices match in order, so A goes to P and B goes to Q, making AB correspond to PQ.
3. **D** – SSA can describe two different triangles. SAS, ASA and AAS are all valid.
4. **B** – Right triangles with a congruent hypotenuse and leg are congruent by HL.
5. **A** – The angle at B is between sides AB and BC, so it is the included angle, which gives SAS.
6. **B** – Corresponding angles are equal, so $2x + 10 = 50$ and $x = 20$. The value 40 is half of 80 and ignores the 10.
7. **B** – The marked side lies between the two marked angles, which is ASA. In AAS the side is not between the angles.
8. **C** – AAA fixes the shape only. A small triangle and a large triangle can have identical angles.
9. **C** – Matching vertices put B with D. Angles A and C are split by the diagonal, not corresponding.
10. **A** – Hypotenuse 15 and leg 9 match in both triangles, so HL applies. Each reaches 12 feet.

Remember

- Congruent triangles have three pairs of congruent sides and three pairs of congruent angles.
- Valid tests: SSS, SAS, ASA, AAS and, for right triangles, HL.
- SSA and AAA do not prove congruence.
- CPCTC: after proving triangles congruent, corresponding parts are congruent.
- A rigid motion maps a figure onto a congruent figure.