

ANSWER MAZE



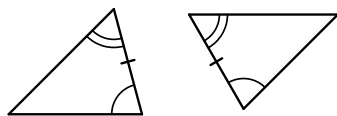
ASA AND AAS TRIANGLE CONGRUENCE

ASA, AAS, or Not Proved?

One page · 10–15 minutes · nothing to prepare

FREE

4

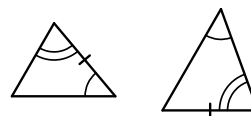


AAS. The tick touches the unmarked corner. →
go to 3

ASA. The tick is between the angles. → go to 7

Put a finger on each corner with arcs. Then trace the ticked side.

7



Not proved. The ticks are in different places. →
go to 2

AAS. Each has two angles and a tick. → go to 6

Check the tick in each triangle, one triangle at a time.

1. **Hand out page 3**, one per student. Nothing else is needed.
2. **Say this once:** *“Start at box 4. Look at the ticked side in both triangles before you choose. Write every box number in the row at the bottom as you go.”*
3. **Check a sheet quickly.** A student with no mistakes writes **4 7 2 5 1 8**: six boxes, then out.

Student sheet page 3, one per student. It shows SAS, ASA and AAS as three small marked triangles.
Answers page 4.

Every wrong answer comes from one of two mistakes. The first mistake is mixing up ASA and AAS. ASA needs the marked side between the two marked angles: its two ends are the corners of those angles. AAS has the marked side somewhere else. Students often read the rule from the order of the written lines, so two boxes give three true lines in an order that spells the wrong rule. These wrong answers send the student to box 3.

The second mistake is thinking that two angles and any side are enough. They are not: the side must be in the same place in both triangles, across from the same angle. Some boxes also show two pairs of equal angles and no side at all, which proves nothing. These wrong answers send the student to box 6. Boxes 3 and 6 ask the same kind of question again, and both of their answers lead back to the route.

The row at the bottom is the check. A clean run is six numbers. Each wrong answer adds at least one more. Guessing does not get a student out: every simple guessing rule, such as always taking the first answer, goes wrong within the first three boxes.



This is the free lesson this activity came from. The worksheet, the full answers and the lesson plan are on it, at three levels of difficulty.

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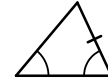
Answer Maze

Start at box 4 · ASA, AAS, or not proved?

Name _____

Period _____

Date _____



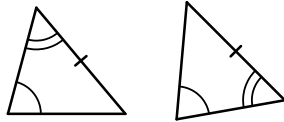
SAS The **angle** is between the two sides.

ASA The **side** is between the two angles.

AAS The side is **not** between the two angles.

Each box shows two triangles, or three lines about two triangles. Angles with the same number of arcs are equal. Sides with a tick are equal. **What do they prove?** Choose an answer, and go to the box it names.

1



AAS. The tick touches the unmarked corner. → go to 8

ASA. The tick is between the angles. → go to 3

Trace the ticked side. Name the corner at each end.

2

In $\triangle ABC$ and $\triangle DEF$:

$\angle B \cong \angle E$ $AB \cong DE$ $\angle C \cong \angle F$

ASA. The side is written in the middle. → go to 3

AAS. AB joins A and B. The angles are at B and C. → go to 5

Find the letters of the two angles. Then read the letters of the side.

3

In $\triangle ABC$ and $\triangle DEF$:

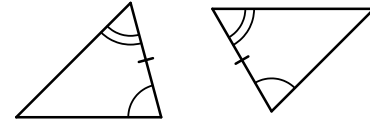
$\angle A \cong \angle D$ $\angle B \cong \angle E$ $AB \cong DE$

ASA. The angles are at A and B. AB joins them. → go to 7

AAS. The side is written last. → go to 4

Circle the letters of the two angles. Then look at the ends of the side.

4

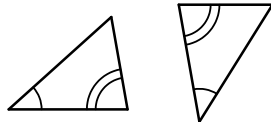


AAS. The tick touches the unmarked corner. → go to 3

ASA. The tick is between the angles. → go to 7

Put a finger on each corner with arcs. Then trace the ticked side.

5

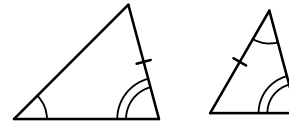


Congruent. The angle pairs are equal. → go to 6

Not proved. No side is marked. → go to 1

Count the ticks on each triangle.

6

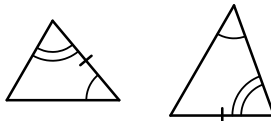


AAS. Each has two angles and a tick. → go to 7

Not proved. The ticks are in different places. → go to 2

For each triangle, name the angle across from the ticked side.

7



Not proved. The ticks are in different places. → go to 2

AAS. Each has two angles and a tick. → go to 6

Check the tick in each triangle, one triangle at a time.

8

In $\triangle ABC$ and $\triangle DEF$:

$\angle A \cong \angle D$ $\angle B \cong \angle E$ $AC \cong EF$

Not proved. AC and EF do not match. → you are out

AAS. Two angles and a side are given. → go to 6

Pair A with D, B with E, C with F. Then pair the sides.

Write each box number as you reach it:

--	--	--	--	--	--	--	--	--



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The route, in order. Boxes 3 and 6 are not on it. A student reaches them only by a wrong answer. They are the last two rows of the table.

4 → 7 → 2 → 5 → 1 → 8 → out

	Box	Right answer, and why	Wrong answer, and why a student picks it
1	Box 4	ASA. The tick is between the angles. In both triangles the ticked side joins the one-arc corner and the two-arc corner.	“AAS. The tick touches the unmarked corner.” goes to box 3. A student who does not check both ends of the ticked side picks this.
2	Box 7	Not proved. The ticks are in different places. In the first triangle the tick joins the two marked corners. In the second it is across from the one-arc angle. The triangles are not congruent: the second is a little larger.	“AAS. Each has two angles and a tick.” goes to box 6. A student who thinks two angles and any side are enough picks this.
3	Box 2	AAS. AB joins A and B. The angles are at B and C. The angles are at B and C. Side AB joins A and B, so it is not between the two angles.	“ASA. The side is written in the middle.” goes to box 3. A student who reads the rule from the order of the lines picks this.
4	Box 5	Not proved. No side is marked. Two pairs of angles are equal, but no side is ticked. Equal angles give the same shape, not the same size.	“Congruent. The angle pairs are equal.” goes to box 6. A student who thinks equal angles are enough picks this.
5	Box 1	AAS. The tick touches the unmarked corner. The ticked side runs from the two-arc corner to the unmarked corner, in both triangles. It is across from the one-arc angle in both.	“ASA. The tick is between the angles.” goes to box 3. A student who sees two angles and a side near each other and does not check the ends of the side picks this.
6	Box 8	Not proved. AC and EF do not match. A goes with D, B with E and C with F. So AC matches DF, not EF. The two equal sides are in different places.	“AAS. Two angles and a side are given.” goes to box 6. A student who thinks two angles and any side are enough picks this.
	Box 3	ASA. The angles are at A and B. AB joins them. The angles are at A and B, and side AB joins A and B. The order of the lines does not matter.	“AAS. The side is written last.” goes to box 4. A student who still reads the rule from the order of the lines picks this.
	Box 6	Not proved. The ticks are in different places. In the first triangle the tick is across from the one-arc angle. In the second it is across from the two-arc angle. The second triangle is smaller.	“AAS. Each has two angles and a tick.” goes to box 7. A student who still thinks two angles and any side are enough picks this.

How to check any box. Find the two marked angles. If the marked side joins their two corners, it is ASA. If one end of the marked side is the third corner, it is AAS, but only when the side is across from the same angle in both triangles. If no side is marked, or the marked sides are in different places, nothing is proved.

A student can find the last four boxes of the route by following the arrows backward from “you are out.” So ask a student with a clean row to explain one box.