

CUT & GLUE SORT

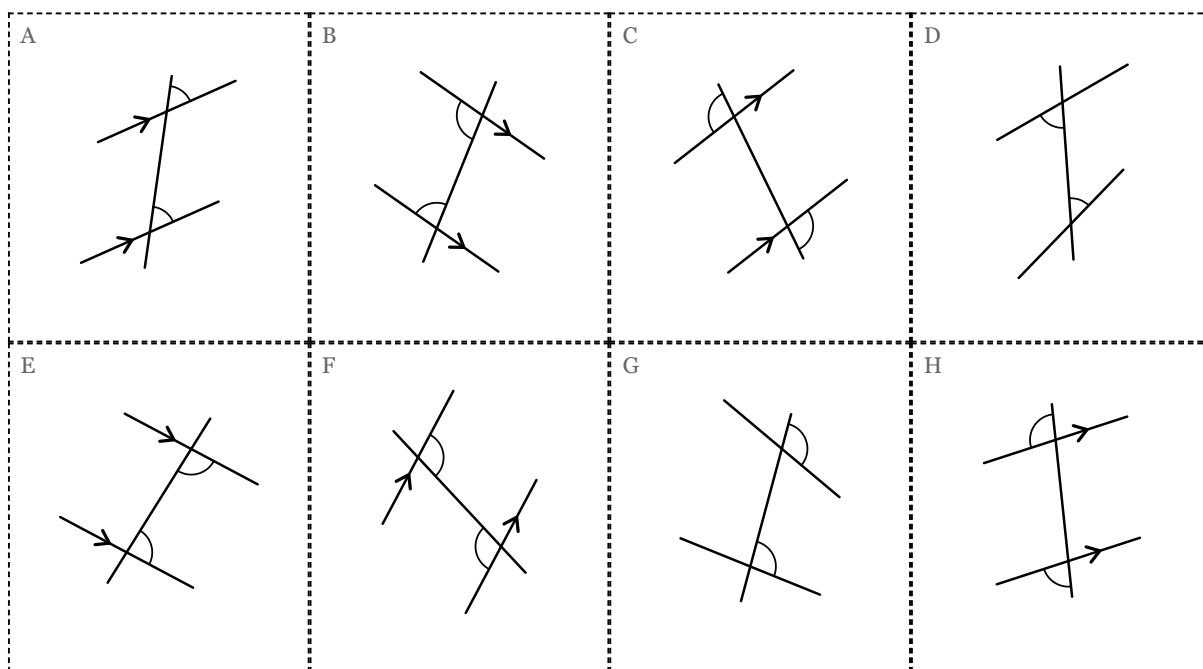


CORRESPONDING, ALTERNATE AND SAME-SIDE ANGLES

Parallel Lines & Transversals

Equal · adds to 180° · no way to tell

FREE



Cut & Glue Sort — how to run it

25 minutes, including the cutting

1. **Hand out both sheets, scissors and glue.** You cut nothing.
2. **Say this once:** *“Four of these twelve have no arrowheads. Those two lines are not parallel. None of the five names tells you anything about them.”*
3. **Cut out the twelve pieces.** Glue each one into its row: equal, adds to 180° , or no way to tell. **Every row gets exactly 4.**

Both sheets pages 3 and 4, one of each per student.
Answers page 5.

The third row is the lesson, not a trick. Pieces D, G, K, L are two lines that are *not* parallel. For these pieces, not one of the five relationships says anything, and there is no answer to be had. You tell the class this at the start. Many students will still glue these pieces in the equal row or the 180° row, because they can name the pair. Talking with them about why the name alone decides nothing is what the sheet is for.

And the cue is the missing arrowheads and nothing else. The two lines do not visibly run together — over this much paper they never meet — so a student looking for a picture of non-parallel lines will not find one. What they can see is that four pieces carry no arrowheads, which is exactly what the arrowheads are for.

What to say when they ask, and they will. “Could I measure it?” Yes — and then you would know about *that drawing*. The five theorems tell you the answer without measuring, and they only do that when the lines are parallel.

Marking takes ten seconds a sheet. Every row holds 4 pieces. A row holding 3 or 5 is wrong before you read a single piece.

Twenty-five minutes, not fifteen. Cutting twelve pieces is five to eight minutes on its own for hands this age, before anybody has thought about an angle.



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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Where does each one go?

Name _____

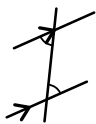
Period _____

Date _____

Cut out the twelve pieces on the next page. Glue each one into the row it belongs in. **Look for the arrowheads first. They are the only thing that says the two lines are parallel. Without them, none of the five names tells you anything.** Every row gets 4.



Corresponding
equal



Alternate interior
equal



Alternate exterior
equal



Same-side interior
add to 180°



Same-side exterior
add to 180°

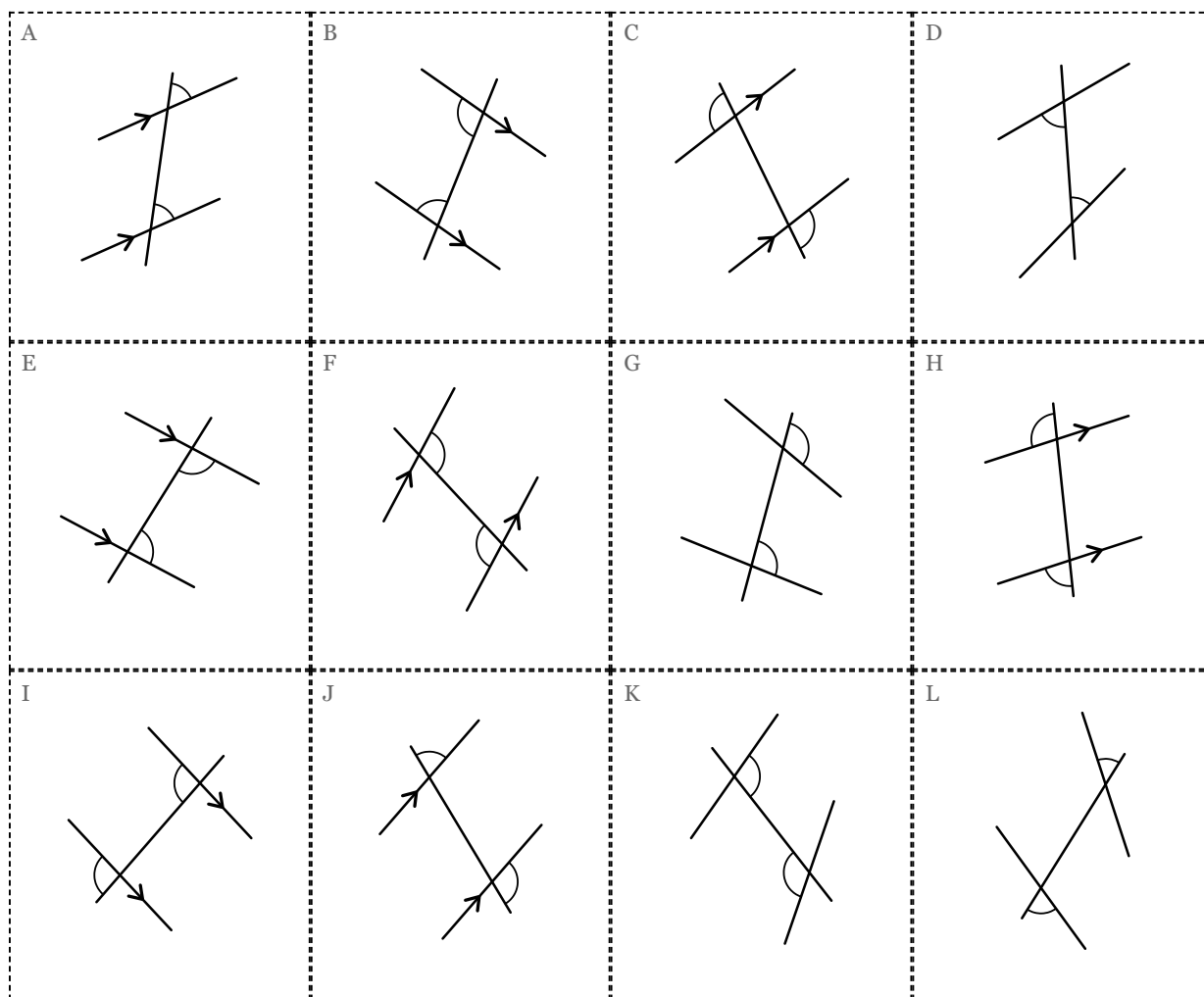
The two marked angles are EQUAL

The two marked angles ADD TO 180°

There is no way to tell *Some of the twelve pieces belong here.*

The twelve pieces

Cut along the dotted lines



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Cut & Glue Sort — answers

For the teacher

4 pieces to a row, always. A row holding 3 or 5 is wrong before any piece is read.

EQUAL **A** — Corresponding
 C — Alternate exterior
 F — Alternate interior
 I — Corresponding

ADD TO 180° **B** — Same-side interior
 E — Same-side interior
 H — Same-side exterior
 J — Same-side exterior

There is no way to tell **D** — the lines are not parallel
 G — the lines are not parallel
 K — the lines are not parallel
 L — the lines are not parallel

Why the third row has no answer. Corresponding, alternate interior, alternate exterior, same-side interior and same-side exterior are names for *where* two angles sit. Each name comes with a promise — equal, or adds to 180° — and every one of those promises is made on condition that the two cut lines are parallel. Take that away and the name still fits the picture and the promise is gone. Those four pieces can be named; they cannot be answered.