

ANSWER MAZE



CORRESPONDING, ALTERNATE AND SAME-SIDE ANGLES

Parallel Lines & Transversals

One page · ten minutes · nothing to prepare

FREE

1

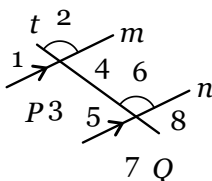
m and n are parallel, and $m \angle 2 = 118^\circ$.

Find $m \angle 6$.

$118^\circ \rightarrow$ go to 5

$62^\circ \rightarrow$ go to 4

Both arcs on the same side of the slanted line? Then they add to 180.



2

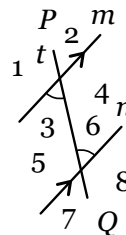
m and n are parallel, and $m \angle 3 = 56^\circ$.

Find $m \angle 6$.

$124^\circ \rightarrow$ go to 7

$56^\circ \rightarrow$ go to 6

One arc outside the parallel lines and one inside? Check that again.



3

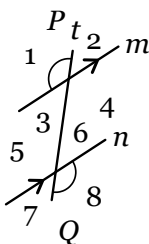
m and n are parallel, and $m \angle 1 = 131^\circ$.

Find $m \angle 8$.

$131^\circ \rightarrow$ go to 8

$49^\circ \rightarrow$ go to 4

Opposite sides of the slanted line means the two are equal.



4

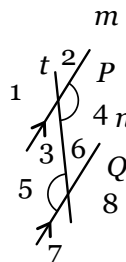
m and n are parallel, and $m \angle 4 = 142^\circ$.

Find $m \angle 5$.

$38^\circ \rightarrow$ go to 5

$142^\circ \rightarrow$ go to 1

Same side of the slanted line adds to 180. It is not equal. That is how you got here.



1. **Hand out page 3.** That is the whole preparation.
2. **Say this once:** *“Write every step number in the row at the bottom as you go. If your row has more than six numbers, you took a wrong turn. The row shows where.”*
3. **Start at step 1.** Work out the angle. Find your answer. Go to the step it sends you to. You are out after six steps.

Student sheet page 3, one per student. Nothing to cut, nothing to set up.
Answers page 4.

The route is $1 \rightarrow 5 \rightarrow 3 \rightarrow 8 \rightarrow 2 \rightarrow 6 \rightarrow \text{out}$. Steps 4 and 7 are not on it: they are where a wrong answer goes. They do not say “wrong” — they name what to look at again and send the student back to the step they came from.

The two answers at every step are the right one and 180° minus the right one, which is the mistake this lesson exists to stop. A student who has the rule the wrong way round hits a box that is not on the route on their first step rather than their last.

And the right one is not always the top line. It is printed first on some steps and second on others, deliberately, so that taking whichever answer is on top does not walk the maze.

What the row at the foot tells you in one glance. A sheet whose row reads $1 \rightarrow 5 \rightarrow 3 \rightarrow 8 \rightarrow 2 \rightarrow 6$ is right. Any other sequence shows the exact step where it went wrong, which is more than a page of ticks would. ****A clean run is six numbers.**** A row of seven or eight is a student who went wrong once and found their way back, which is worth a word rather than a mark.



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 step 1

Name _____

Period _____

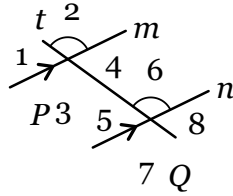
Date _____

1

m and n are parallel,
and $m\angle 2 = 118^\circ$.
Find $m\angle 6$.

$118^\circ \rightarrow$ go to 5
 $62^\circ \rightarrow$ go to 4

Both arcs on the same side of
the slanted line? Then they
add to 180.

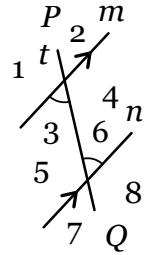


2

m and n are parallel, and $m\angle 3$
 $= 56^\circ$.
Find $m\angle 6$.

$124^\circ \rightarrow$ go to 7
 $56^\circ \rightarrow$ go to 6

One arc outside the parallel lines and
one inside? Check that again.

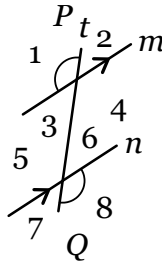


3

m and n are parallel, and $m\angle$
 $\angle 1 = 131^\circ$.
Find $m\angle 8$.

$131^\circ \rightarrow$ go to 8
 $49^\circ \rightarrow$ go to 4

Opposite sides of the slanted line
means the two are equal.

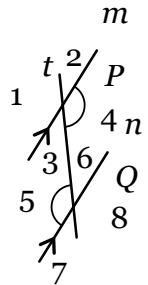


4

m and n are parallel, and $m\angle 4$
 $= 142^\circ$.
Find $m\angle 5$.

$38^\circ \rightarrow$ go to 5
 $142^\circ \rightarrow$ go to 1

Same side of the slanted line adds to
180. It is not equal. That is how you got
here.

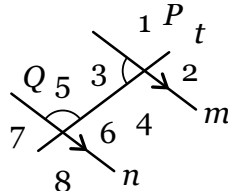


5

m and n are parallel, and
 $m\angle 3 = 74^\circ$.
Find $m\angle 5$.

$74^\circ \rightarrow$ go to 7
 $106^\circ \rightarrow$ go to 3

Between the two parallel lines
is inside. Beyond them is
outside.

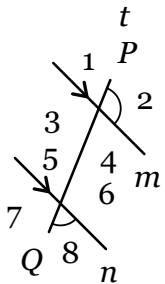


6

m and n are parallel, and $m\angle$
 $\angle 2 = 113^\circ$.
Find $m\angle 8$.

$67^\circ \rightarrow$ you are out
 $113^\circ \rightarrow$ go to 4

Same side and both outside still adds
to 180.

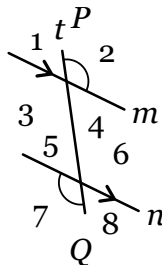


7

m and n are parallel, and $m\angle$
 $\angle 2 = 124^\circ$.
Find $m\angle 7$.

$56^\circ \rightarrow$ go to 1
 $124^\circ \rightarrow$ go to 5

Opposite sides of the slanted line
means the two are equal. There was
no need to subtract from 180.

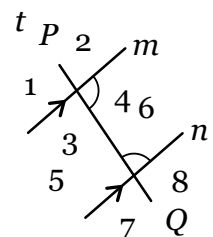


8

m and n are parallel, and
 $m\angle 4 = 97^\circ$.
Find $m\angle 6$.

$97^\circ \rightarrow$ go to 7
 $83^\circ \rightarrow$ go to 2

Read which side of the slanted
line each arc is on before
anything else.



Write every step number here as you go. It shows you the way back if you land in a box that is not on the route. Your teacher reads this row too. **A clean run is six numbers.**

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Answer Maze — answers

For the teacher

The route, in order. Steps 4 and 7 are off the route and are on nobody's correct route.

1 → 5 → 3 → 8 → 2 → 6 → out

	Step	Given	Asked	Answer	Why	Sends them to
1	Step 1	$m\angle 2 = 118^\circ$	$m\angle 6$	118°	Corresponding	step 5
2	Step 5	$m\angle 3 = 74^\circ$	$m\angle 5$	106°	Same-side interior	step 3
3	Step 3	$m\angle 1 = 131^\circ$	$m\angle 8$	131°	Alternate exterior	step 8
4	Step 8	$m\angle 4 = 97^\circ$	$m\angle 6$	83°	Same-side interior	step 2
5	Step 2	$m\angle 3 = 56^\circ$	$m\angle 6$	56°	Alternate interior	step 6
6	Step 6	$m\angle 2 = 113^\circ$	$m\angle 8$	67°	Same-side exterior	out

The wrong answer at every step is the supplement of the right one. A student who lands on box 4 or box 7 has read an equal pair as adding to 180° , or a same-side pair as equal — there is no third way to get there, and no arithmetic slip produces it. **The hint on those two boxes names that misunderstanding**, and every other box carries a hint of the same shape in the same place, so nothing on the sheet says which two are off the route. That was the point: when only those two carried an extra line and no destination, a student could walk the whole maze by avoiding them.