

SCAVENGER HUNT



CORRESPONDING, ALTERNATE AND SAME-SIDE ANGLES

Parallel Lines & Transversals

Corresponding · alternate · same-side angles

FREE

ANSWER

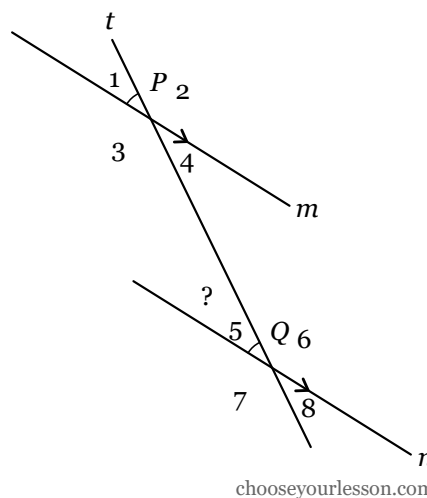
76°

Lines m and n are parallel, and $m \angle 1 = 32^\circ$.

Find $m \angle 5$.

One arc at a time: inside the parallel lines, or outside them?

A



1. **Tape the 16 cards round the room**, in any order. Send each group to a *different* card. Each card has a large letter in its bottom left corner. Start each group on one of the 8 cards on this page: the list is *D M H A K R F P*.
2. **Say this once:** “Three of the five names mean the two angles are equal. Two of them mean they add to 180. Write every card you visit in the row on your sheet. You are done after 8 lines.”
3. **Solve the card you are at. Find the card with your answer at the top.** You are finished when you get back to the card you started at.

16 cards	pages 3–10, one copy. Two to a sheet — one cut through the stack.
Record sheet	page 11, one per student. It carries the five names as pictures.
Answers	page 12 — yours. It does not go in the room.

8 of the 16 cards make the ring, and the other 8 are where a wrong answer goes. They do not look any different, and that is the whole point: a card, a number at the top, a task, a figure and one line, like every other. A group that reads a same-side pair as equal gets the supplement — and that number is at the top of one of those cards. They walk to it, do the card standing there, and its answer sends them *back to the card they got wrong*, to try it again.

The check is the length of their row, and it is the only one you need. A clean run is **8 lines**. Every wrong answer costs exactly two more — the card that catches it and the card it sends them back to — and nothing in the room can cost fewer, because no card off the ring ever sends a group further round than the card they came from. *Count the rows*.

Both numbers are in the room. The right answer and the wrong one are each at the top of a card. So a group cannot choose between them by looking for the number on the wall. It has to read the figure.

What to ask a group going round in circles. Not the answer: “*are your two angles on the same side of the slanted line?*” If they are, the two add to 180 and the group has set them equal — the mistake this lesson exists to stop, and the line at the foot of the card they landed on says it too.

For the group that finishes early, the joke on the record sheet decodes from the numbers they wrote down, so it is a second pass over their own work. **Cards stay on the wall** — say so, because one student will take one down.



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

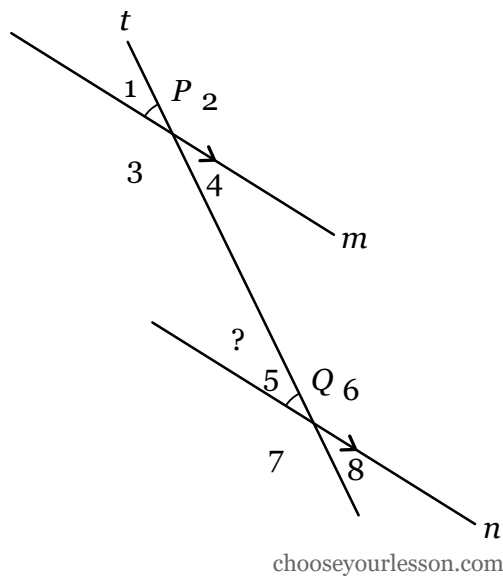
76°

Lines m and n are parallel, and $m \angle 1 = 32^\circ$.

Find $m \angle 5$.

One arc at a time: inside the parallel lines, or outside them?

A



ANSWER

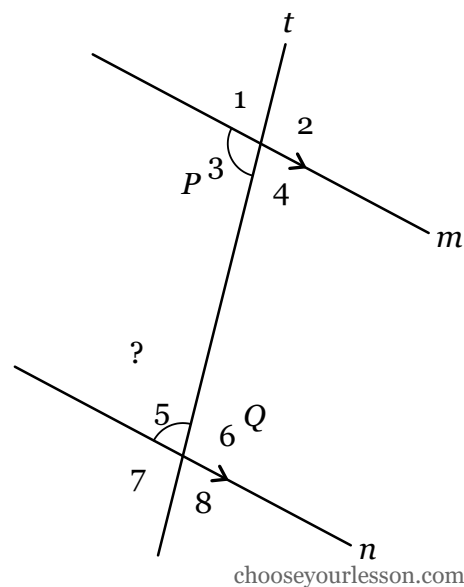
148°

Lines m and n are parallel, and $m \angle 3 = 104^\circ$.

Find $m \angle 5$.

Same side of the slanted line means they add to 180, not equal.

B



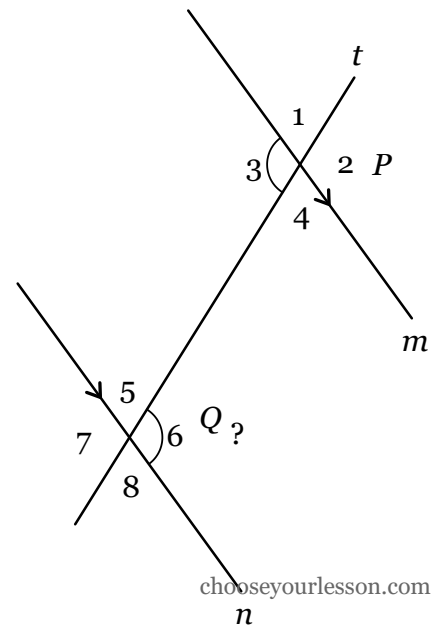
ANSWER

137°

Lines m and n are parallel, and $m \angle 3 = 112^\circ$.

Find $m \angle 6$.

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



C

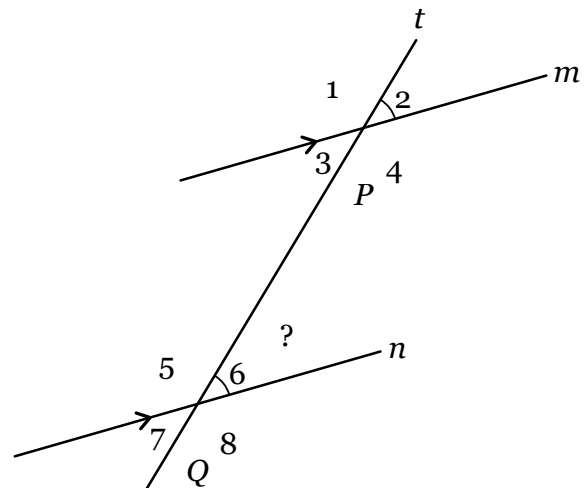
ANSWER

112°

Lines m and n are parallel, and $m \angle 2 = 43^\circ$.

Find $m \angle 6$.

Which side of the slanted line is each
arc on? That question first.



D

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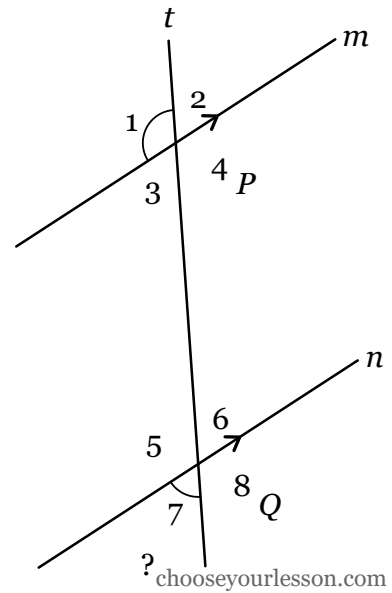
ANSWER

68°

Lines m and n are parallel, and $m \angle 1 = 119^\circ$.

Find $m \angle 7$.

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



E

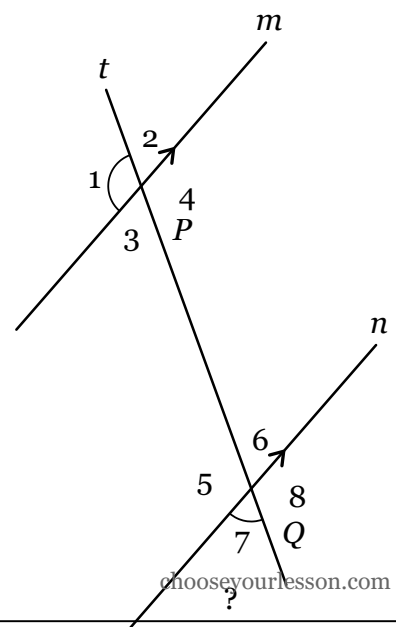
ANSWER

138°

Lines m and n are parallel, and $m \angle 1 = 119^\circ$.

Find $m \angle 7$.

Read the two arcs, not the numbers, before you decide anything.



F

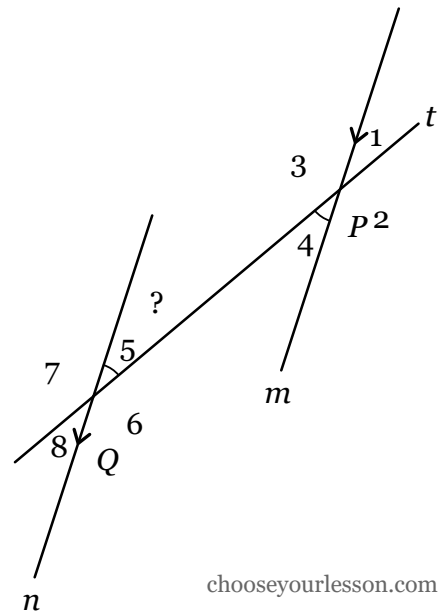
ANSWER

53°

Lines m and n are parallel, and $m \angle 4 = 32^\circ$.

Find $m \angle 5$.

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



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G

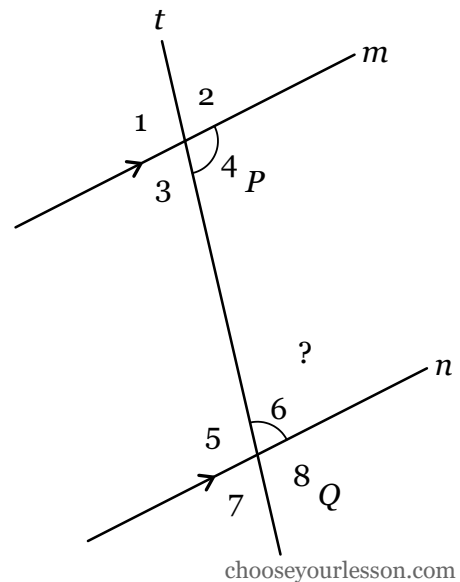
ANSWER

118°

Lines m and n are parallel, and $m \angle 4 = 104^\circ$.

Find $m \angle 6$.

Same side of the slanted line, or opposite sides? Everything follows from it.



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H

ANSWER

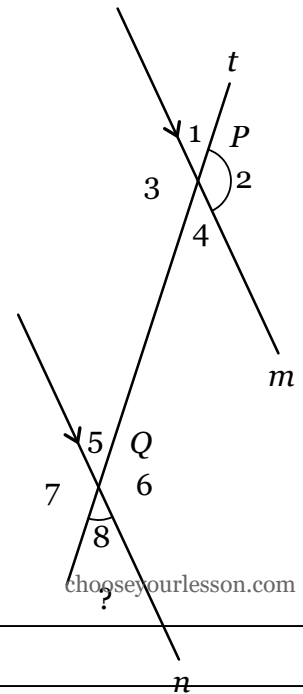
62°

Lines m and n are parallel, and $m \angle 2 = 137^\circ$.

Find $m \angle 8$.

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

J



ANSWER

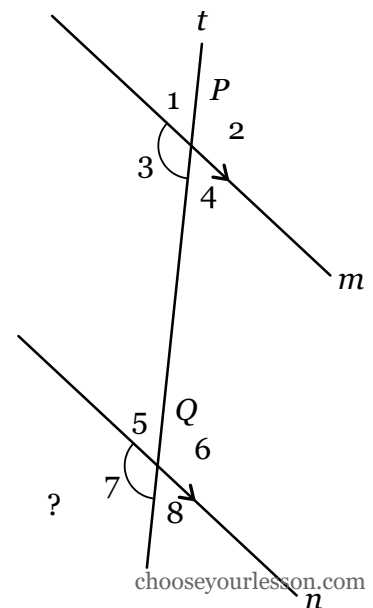
32°

Lines m and n are parallel, and $m \angle 3 = 127^\circ$.

Find $m \angle 7$.

The slanted line is the one that crosses both the others.

K



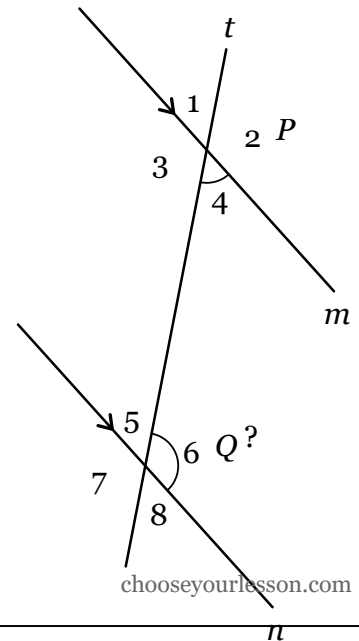
ANSWER

42°

Lines m and n are parallel, and $m \angle 4 = 53^\circ$.

Find $m \angle 6$.

Same side and both outside still adds to 180.



L

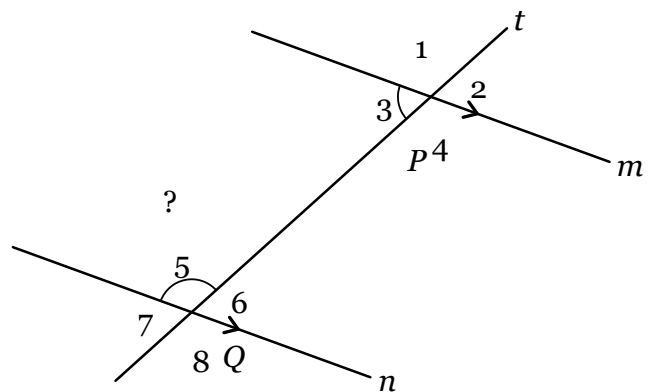
ANSWER

43°

Lines m and n are parallel, and $m \angle 3 = 62^\circ$.

Find $m \angle 5$.

Then ask whether each arc is between the two parallel lines or outside them.



M

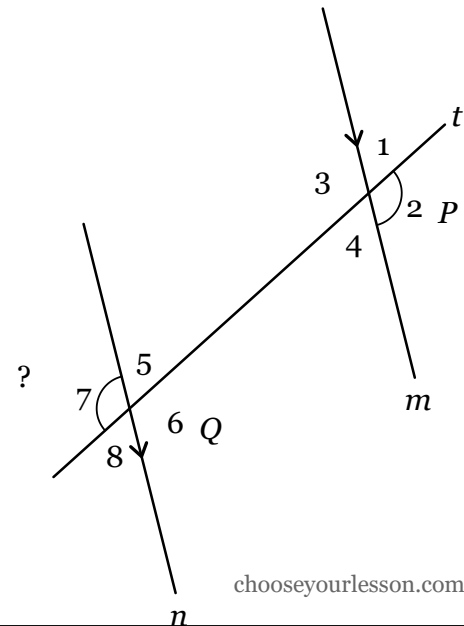
ANSWER

104°

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

Find $m \angle 7$.

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



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N

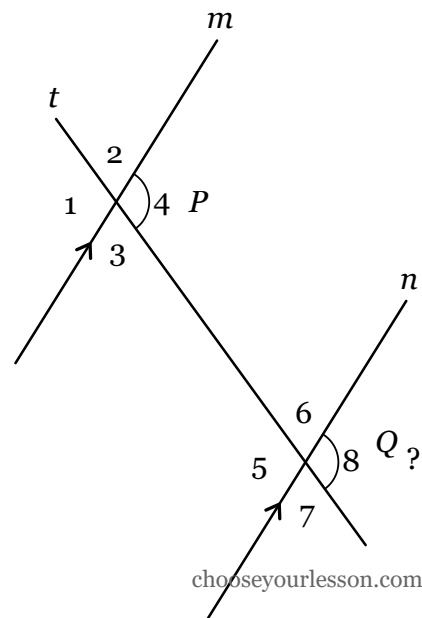
ANSWER

61°

Lines m and n are parallel, and $m \angle 4 = 112^\circ$.

Find $m \angle 8$.

Opposite sides, or the same side? Ask it of the slanted line.



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P

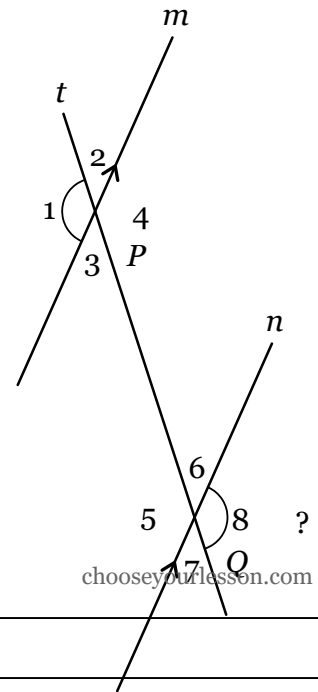
ANSWER

119°

Lines m and n are parallel, and $m \angle 1 = 138^\circ$.

Find $m \angle 8$.

Opposite sides of the slanted line means the two are equal, not 180 minus the angle.



Q

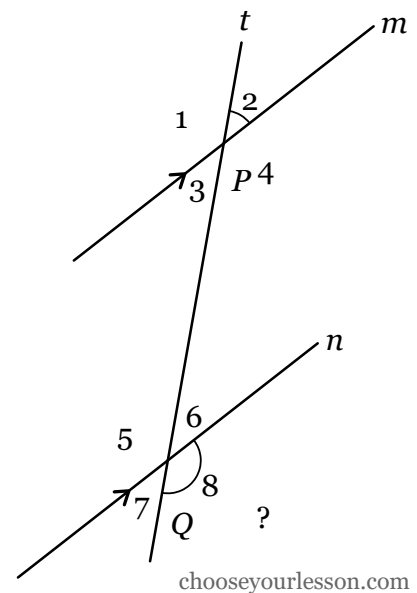
ANSWER

127°

Lines m and n are parallel, and $m \angle 2 = 42^\circ$.

Find $m \angle 8$.

Two questions and no more, and the picture answers both of them.



R

Scavenger Hunt — where I went

Parallel lines & transversals

Name _____ Period _____ Date _____

Solve the card you are at. Fill in one line. Then find the card with your answer at the top. **A clean run is 8 lines.** A longer row means one of your answers was wrong. The line at the foot of the card you land on says which mistake.

Corresponding <i>equal</i>	Alternate interior <i>equal</i>	Alternate exterior <i>equal</i>	Same-side interior <i>add to 180°</i>	Same-side exterior <i>add to 180°</i>

Card letter	My answer	Which of the five names above
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Two lines are told to keep exactly the same distance apart. For ever. What are they?

Every number stands for a letter. Write the letter for each of your answers in the box under that number. Leave the other boxes empty. Then read the boxes you filled, in order. **If it does not spell a word, one answer was wrong.**

32 = P 42 = T 43 = A 53 = S 61 = R 62 = H 68 = N 76 = A 104 = D 112 = L 118 = L 119 = M 127 = E 137 = G
138 = L 148 = U

32	42	43	53	61	62	68	76	104	112	118	119	127	137	138	148



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Scavenger Hunt — answers

For the teacher

The ring in order. A group may begin anywhere on it; wherever it begins, 8 right answers bring it back to that card.

D → M → H → A → K → R → F → P → D

Two lines are told to keep exactly the same distance apart. For ever. What are they?

PARALLEL. The boxes on the record sheet are in order of the answers, smallest first.

The answers on the ring, smallest first: 32 = P, 43 = A, 61 = R, 76 = A, 112 = L, 118 = L, 127 = E, 138 = L, which spells PARALLEL.

	Card	Given	Asked	Answer	Why	Sends them to	Letter
1	D	$m\angle 2 = 43^\circ$	$m\angle 6$	43°	Corresponding	M	A
2	M	$m\angle 3 = 62^\circ$	$m\angle 5$	118°	Same-side interior	H	L
3	H	$m\angle 4 = 104^\circ$	$m\angle 6$	76°	Same-side interior	A	A
4	A	$m\angle 1 = 32^\circ$	$m\angle 5$	32°	Corresponding	K	P
5	K	$m\angle 3 = 127^\circ$	$m\angle 7$	127°	Corresponding	R	E
6	R	$m\angle 2 = 42^\circ$	$m\angle 8$	138°	Same-side exterior	F	L
7	F	$m\angle 1 = 119^\circ$	$m\angle 7$	61°	Same-side exterior	P	R
8	P	$m\angle 4 = 112^\circ$	$m\angle 8$	112°	Corresponding	D	L

The 8 cards that are not on the ring

	Card	Given	Asked	Answer	Why	Sends them to	It is there for
	B	$m\angle 3 = 104^\circ$	$m\angle 5$	76°	Same-side interior	A	caught card A
	C	$m\angle 3 = 112^\circ$	$m\angle 6$	112°	Alternate interior	D	caught card D
	E	$m\angle 1 = 119^\circ$	$m\angle 7$	61°	Same-side exterior	P	caught card P
	G	$m\angle 4 = 32^\circ$	$m\angle 5$	32°	Alternate interior	K	caught card K
	J	$m\angle 2 = 137^\circ$	$m\angle 8$	43°	Same-side exterior	M	caught card M
	L	$m\angle 4 = 53^\circ$	$m\angle 6$	127°	Same-side interior	R	caught card R
	N	$m\angle 2 = 118^\circ$	$m\angle 7$	118°	Alternate exterior	H	caught card H
	Q	$m\angle 1 = 138^\circ$	$m\angle 8$	138°	Alternate exterior	F	caught card F

No number is at the top of two cards, and every number a group can arrive at is at the top of one. The answer is not always the smaller number: 4 of the 8 ring answers are more than 90°. And all five names say what they say *only* because *m* and *n* are parallel: take the arrowheads away and not one card has an answer.