LESSON MAKER PRO

Slanted Side Secrets

Find missing angles in parallelograms.

GRADE 8 · 8.GM.B

8.GM.B "Analyze parallel lines cut by a transversal."

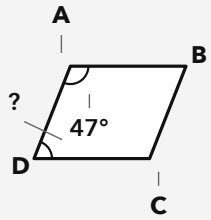
NAME _____ DATE _____

PARALLEL LINES, PAIRED ANGLES

In a parallelogram, opposite sides are parallel. Each of the other sides acts as a transversal. The two inside angles beside that transversal add to 180°, and opposite angles are equal.

WORKED EXAMPLE

Find angle D.

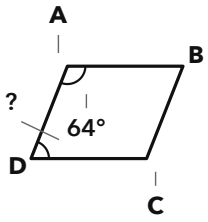


1. Angles A and D are inside angles beside the same transversal.
2. Angle D = 180° - 47°.
3. Angle D = 133°.

Answer: 133°

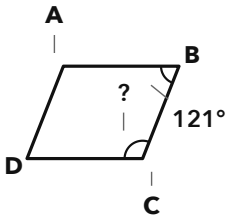
PRACTICE 6 problems

1 Find angle D.



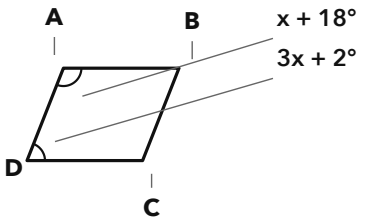
ANSWER _____

2 Find angle C.



ANSWER _____

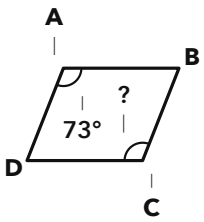
3 Find x and angle D.



ANSWER _____

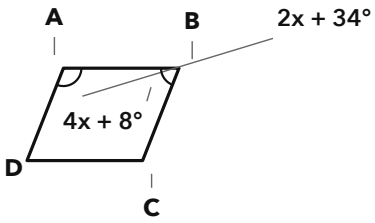
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4 Find angle C.



ANSWER _____

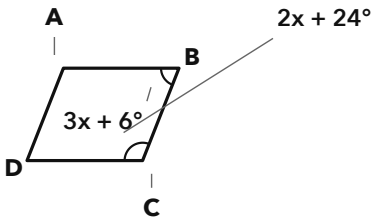
5 Find x.



ANSWER _____

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6 Find x and angle C.

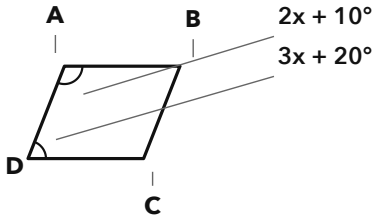


ANSWER _____

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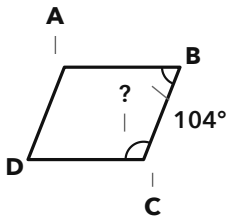
APPLY IT Show your work

1 A skate park uses parallelogram tiles along a ramp. For the tile shown, find x and angle D.



ANSWER _____

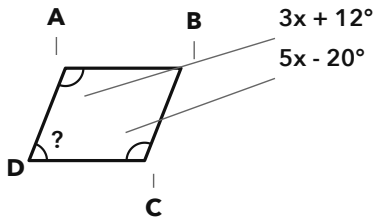
2 A streamer designs a parallelogram frame for a video overlay. Find angle C of the frame.



ANSWER _____

CHALLENGE One step up

Opposite angles in this parallelogram have different expressions. Find x and angle D. Show how you know.



WORK SPACE AND ANSWER

ANSWER KEY # Slanted Side Secrets

GRADE 8 · 8.GM.B

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find angle D.	**116°**
2	Find angle C.	**59°**
3	Find x and angle D.	**x = 40; angle D = 122°**
4	Find angle C.	**73°**
5	Find x.	**x = 23**
6	Find x and angle C.	**x = 30; angle C = 84°**

PART 2 · APPLY IT

1. **x = 30; angle D = 110°** Adjacent angles add to 180°, so (2x + 10) + (3x + 20) = 180 and x = 30. Angle D is 3(30) + 20 = 110°.
2. **76°** Angles B and C are adjacent, so angle C is 180° - 104° = 76°.

CHALLENGE

x = 16; angle D = 120°. Opposite angles A and C are equal, so 3x + 12 = 5x - 20 and x = 16. Angle A is 60°, so adjacent angle D is 120°.

For problems that ask for two values, require both. In the challenge, accept any correct explanation that uses equal opposite angles and supplementary adjacent angles.