LESSON MAKER PRO

Triangle Angle Detectives

Use triangle angle sums and equal sides to find missing angles.

GRADE 7 · 7.GM.A

7.GM.A "Construct and describe geometric figures, analyzing relationships among them."

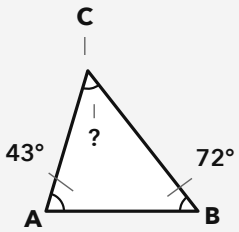
NAME _____ DATE _____

TWO ANGLE RULES

The three interior angles of a triangle add to 180°. In an isosceles triangle, the angles opposite the two equal sides have the same measure.

WORKED EXAMPLE

Find angle C.

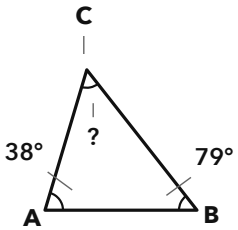


1. Add the known angles: 43° + 72° = 115°.
2. Subtract from 180°: 180° - 115° = 65°.

Answer: Angle C = 65°.

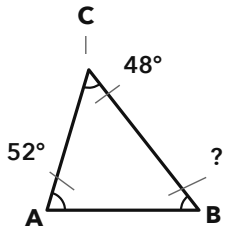
PRACTICE 6 problems

1 Find angle C.



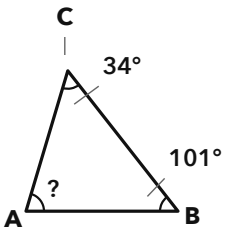
ANSWER _____

2 Find angle B.



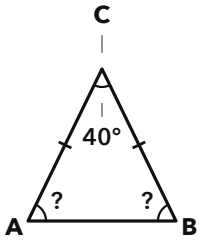
ANSWER _____

3 Find angle A.



ANSWER _____

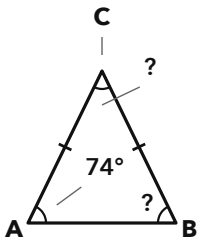
4 Find angles A and B. The marked sides are equal.



ANSWER _____

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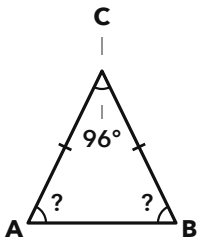
5 Find angles B and C. The marked sides are equal.



ANSWER _____

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6 Find angle A. Explain why angle B has the same measure.

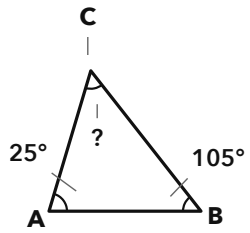


ANSWER _____

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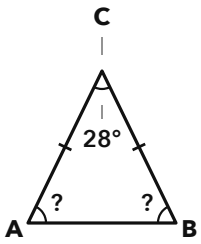
APPLY IT Show your work

1 A skateboard ramp has a triangular side panel. Find its missing interior angle.



ANSWER _____

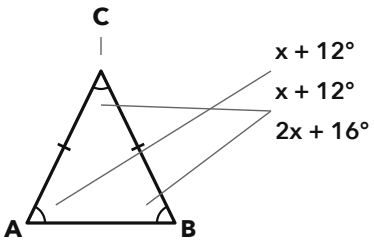
2 A game designer makes an isosceles badge with the two marked sides equal. Find angles A and B.



ANSWER _____

CHALLENGE One step up

The marked sides are equal. Find x and all three interior angle measures.



WORK SPACE AND ANSWER

ANSWER KEY

Triangle Angle Detectives

GRADE 7 · 7.GM.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find angle C.	**63°**
2	Find angle B.	**80°**
3	Find angle A.	**45°**
4	Find angles A and B. The marked sides are equal.	**A = 70°; B = 70°.**
5	Find angles B and C. The marked sides are equal.	**B = 74°; C = 32°.**
6	Find angle A. Explain why angle B has the same measure.	**A = 42°. Sides BC and CA are equal, so their opposite angles, A and B, are equal.**

PART 2 · APPLY IT

1. **50°** Subtract the two known angles from 180°: 180° - 25° - 105° = 50°.
2. **A = 76°; B = 76°.** The marked sides make angles A and B equal. Each is (180° - 28°) / 2 = 76°.

CHALLENGE

x = 35; A = 47°; B = 47°; C = 86°.

In each isosceles figure, sides BC and CA are marked equal, so angles A and B are equal. For the challenge, (x + 12) + (x + 12) + (2x + 16) = 180.