

Perimeter Puzzle Lab

Find the full boundary or a missing side.

GRADE 3 • TEKS 3.7.B

3.7.B “determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems;”

NAME _____

DATE _____

TRACE EVERY OUTSIDE SIDE

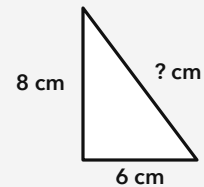
Perimeter is the distance around a polygon. Add every side once. For a missing side, subtract the sum of known sides from the given perimeter. Check by adding all sides. Use the labels, not a ruler: drawings are not actual size.

WORKED EXAMPLE

This triangle has a perimeter of 24 cm. Find the missing side.

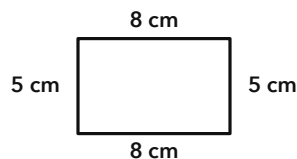
1. The known sides total $6 + 8 = 14$ cm.
2. Subtract from the perimeter: $24 - 14 = 10$ cm. Check: $6 + 10 + 8 = 24$.

Answer: The missing side is 10 cm.



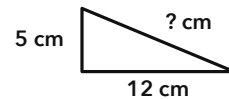
PRACTICE 4 problems

- 1** Find the perimeter. Show an addition equation and include the unit.



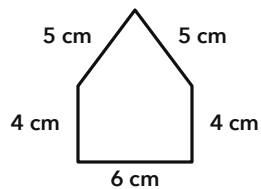
ANSWER _____

- 2** The perimeter is 30 cm. Find the missing side. Show how you know.



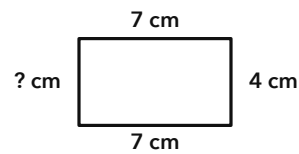
ANSWER _____

- 3** Find the perimeter of this five-sided polygon. Count every side once.



ANSWER _____

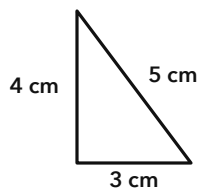
- 4** The perimeter is 22 cm. Find the missing side. Check by adding all four sides.



ANSWER _____

APPLY IT Show your work

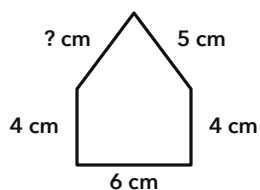
- 1** A ribbon goes once around this triangular card with no overlap. How many centimeters of ribbon are needed? Show your equation.



ANSWER _____

2

A five-sided sign has a border 24 cm long. One side label is missing. Find that length, then check the whole border.

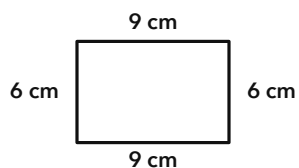


ANSWER _____

CHALLENGE

One step up

Kai says the perimeter is 15 cm because $9 + 6 = 15$. Explain the mistake and find the correct perimeter. Then find how much more than 15 cm is needed to go all the way around.



PRACTICE 1

Find the perimeter. Show an addition equation and include the unit.

$$8 + 5 + 8 + 5 = 26 \text{ cm.}$$

PRACTICE 2

The perimeter is 30 cm. Find the missing side. Show how you know.

$$30 - (12 + 5) = 13 \text{ cm. Check: } 12 + 13 + 5 = 30 \text{ cm.}$$

PRACTICE 3

Find the perimeter of this five-sided polygon. Count every side once.

$$6 + 4 + 5 + 5 + 4 = 24 \text{ cm.}$$

PRACTICE 4

The perimeter is 22 cm. Find the missing side. Check by adding all four sides.

$$22 - (7 + 4 + 7) = 4 \text{ cm. Check: } 7 + 4 + 7 + 4 = 22 \text{ cm.}$$

APPLY IT 1

$$3 + 5 + 4 = 12 \text{ cm of ribbon.}$$

The border uses every outside side exactly once; perimeter is a length in centimeters.

APPLY IT 2

$$24 - (6 + 4 + 5 + 4) = 5 \text{ cm. Check: } 6 + 4 + 5 + 5 + 4 = 24 \text{ cm.}$$

The border uses every outside side exactly once; perimeter is a length in centimeters.

CHALLENGE

Kai counted only two sides. $9 + 6 + 9 + 6 = 30$ cm. The extra length is $30 - 15 = 15$ cm.

All side labels correspond to geometrically consistent polygons. Accept reordered sums and correct repeated-addition or multiplication methods. Require a length unit (cm), not square centimeters. Missing-side tasks must include the given total and a check; finding a matching opposite side on a rectangle is also valid.