# Perimeter of Polygons

Spot mistakes, reason, and work backward

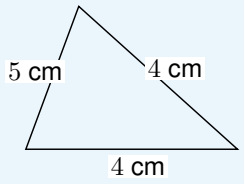
**Name** _____ **Date** _____ **Score** _____ / 6

## QUICK REVIEW

Perimeter is the distance around the outside. Add every outer side exactly once. Use length units, not square units. If one side is missing, subtract the known side lengths from the total perimeter.

**Worked example**

Find the perimeter of this triangle. The drawing is not to scale.




**1.** Add the first two sides: $4 + 4 = 8$ cm.

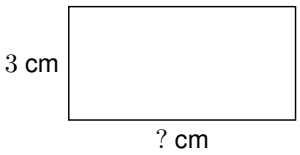
**2.** Include the third side: $8 + 5 = 13$ cm.

**Answer:** $13$ cm.

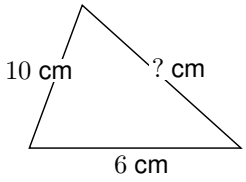
## Practice Problems

Show your thinking.

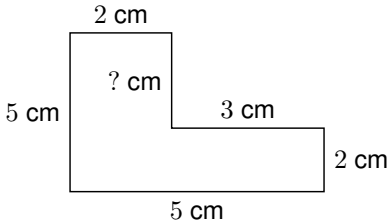
**1.** A rectangle has perimeter $22$ cm and height $3$ cm. Find its length.



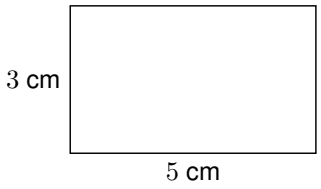

**2.** This triangle has perimeter $24$ cm. Find the missing side length.




**3.** The L-shaped figure has perimeter $20$ cm. Find the missing step length. The drawing is not to scale.

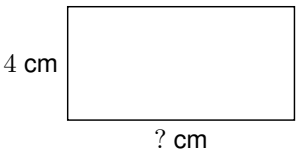



**4.** Rae reports a perimeter of $15$ cm by multiplying $5 \times 3$. Correct the method and answer.




**5.** Design another whole-number-sided rectangle with perimeter $20$ cm. Its height must be $1$ cm. Find the length.

**6.** A rectangle has perimeter $22$ cm and height $4$ cm. Find its length.



# Answer Key

1. $8$ cm.
2. $8$ cm.
3. $3$ cm.
4. $16$ cm.
5. Length $9$ cm.
6. $7$ cm.

## Step-by-Step Solutions

Follow each calculation, then check your own work.

### Problem 1

**1.** The two heights use $3 + 3 = 6$ cm; the two lengths total $22 - 6 = 16$ cm.

**2.** Each length is $16 \div 2 = 8$ cm. Check: $8 + 3 + 8 + 3 = 22$ cm.

### Problem 2

**1.** The known sides total $6 + 10 = 16$ cm.

**2.** The missing side is $24 - 16 = 8$ cm; $6 + 8 + 10 = 24$ checks it.

### Problem 3

**1.** The five known lengths total $5 + 2 + 3 + 2 + 5 = 17$ cm.

**2.** Subtract from the full perimeter: $20 - 17 = 3$ cm.

### Problem 4

**1.** $5 \times 3 = 15$ measures covered area in square centimeters, not the edge.

**2.** Add all outer lengths: $5 + 3 + 5 + 3 = 16$ cm.

### Problem 5

**1.** Half the perimeter is $20 \div 2 = 10$ cm, the sum of one length and one height.

**2.** With height $1$ cm, length is $10 - 1 = 9$ cm. Check $2 \times (9 + 1) = 20$ cm.

### Problem 6

**1.** The two heights use $4 + 4 = 8$ cm; the two lengths total $22 - 8 = 14$ cm.

**2.** Each length is $14 \div 2 = 7$ cm. Check: $7 + 4 + 7 + 4 = 22$ cm.

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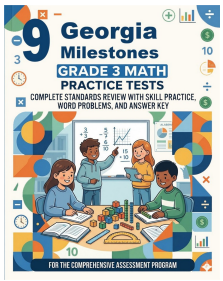


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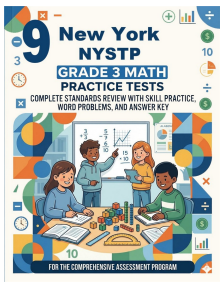


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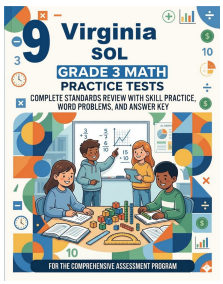


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