

Perimeter Truth Check

Add every side to check the answer.

3.MG.2.b.iii "Solve problems, including those in context, involving perimeter: given the lengths of all sides of a polygon (with no more than six sides), determine its perimeter and justify the measurement."

NAME _____

DATE _____

CORRECT PERIMETER

The perimeter answer matches the sum of every side length.

A four-sided shape has sides 10 m, 11 m, 10 m, and 11 m. Its perimeter answer is 42 m.

WRONG PERIMETER

The perimeter answer does not match the sum of every side length. Add all the sides to find the correct total.

A triangle has sides 12 in, 10 in, and 11 in. Its perimeter answer is 30 in.

1 SORT _____ 8 items

Circle CORRECT or WRONG for each perimeter answer, then choose two items and tell how adding all the side lengths proves your choices.

- | | | |
|--|--|--------------------------------------|
| 1. Triangle sides: 4 cm, 4 cm, 5 cm. Perimeter answer: 13 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 2. Rectangle sides: 6 cm, 3 cm, 6 cm, 3 cm. Perimeter answer: 15 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 3. Pentagon sides: 2 cm, 3 cm, 2 cm, 4 cm, 3 cm. Perimeter answer: 15 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 4. Four-sided shape sides: 5 cm, 7 cm, 4 cm, 6 cm. Perimeter answer: 22 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 5. Six-sided shape sides: 2 cm, 2 cm, 3 cm, 2 cm, 4 cm, 3 cm. Perimeter answer: 16 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 6. Triangle sides: 8 cm, 5 cm, 7 cm. Perimeter answer: 19 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 7. Rectangle sides: 9 cm, 2 cm, 9 cm, 2 cm. Perimeter answer: 22 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |
| 8. Pentagon sides: 1 cm, 4 cm, 3 cm, 5 cm, 2 cm. Perimeter answer: 14 cm. | <input type="button" value="CORRECT"/> | <input type="button" value="WRONG"/> |

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write two new perimeter answers. Make one CORRECT and one WRONG. For each one, list every side length of a polygon with 3 to 6 sides and state the perimeter answer.

CORRECT _____

WRONG _____

CHALLENGE

Create a six-sided polygon with a perimeter of 30 cm. Use whole-number side lengths, list all six sides, and write an addition equation that proves the perimeter.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Triangle sides: 4 cm, 4 cm, 5 cm. Perimeter answer: 13 cm.	CORRECT	$4 + 4 + 5 = 13$ cm.
2	Rectangle sides: 6 cm, 3 cm, 6 cm, 3 cm. Perimeter answer: 15 cm.	WRONG	$6 + 3 + 6 + 3 = 18$ cm, not 15 cm.
3	Pentagon sides: 2 cm, 3 cm, 2 cm, 4 cm, 3 cm. Perimeter answer: 15 cm.	WRONG	$2 + 3 + 2 + 4 + 3 = 14$ cm, not 15 cm.
4	Four-sided shape sides: 5 cm, 7 cm, 4 cm, 6 cm. Perimeter answer: 22 cm.	CORRECT	$5 + 7 + 4 + 6 = 22$ cm.
5	Six-sided shape sides: 2 cm, 2 cm, 3 cm, 2 cm, 4 cm, 3 cm. Perimeter answer: 16 cm.	CORRECT	$2 + 2 + 3 + 2 + 4 + 3 = 16$ cm.
6	Triangle sides: 8 cm, 5 cm, 7 cm. Perimeter answer: 19 cm.	WRONG	$8 + 5 + 7 = 20$ cm, not 19 cm.
7	Rectangle sides: 9 cm, 2 cm, 9 cm, 2 cm. Perimeter answer: 22 cm.	CORRECT	$9 + 2 + 9 + 2 = 22$ cm.
8	Pentagon sides: 1 cm, 4 cm, 3 cm, 5 cm, 2 cm. Perimeter answer: 14 cm.	WRONG	$1 + 4 + 3 + 5 + 2 = 15$ cm, not 14 cm.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **CORRECT:** A four-sided shape has sides 6 cm, 8 cm, 6 cm, and 8 cm. Perimeter answer: 28 cm.
- **WRONG:** A pentagon has sides 3 cm, 5 cm, 4 cm, 2 cm, and 3 cm. Perimeter answer: 16 cm.

Challenge: Sides: 4 cm, 5 cm, 6 cm, 4 cm, 5 cm, 6 cm. $4 + 5 + 6 + 4 + 5 + 6 = 30$ cm.

Items 1, 4, 5, and 7 are CORRECT. For Part 2, look for an addition equation using every side length and a comparison to the stated perimeter answer.