

Area & perimeter puzzles — Sides to 15

Name: _____

Date: _____

Find the two side lengths. Show how you worked them out.



- 1 A rug is a rectangle covering 80 square feet. Its braided edge runs 36 feet all the way round.

How long are its two sides?

Why

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___ and ___

- 2 A field is a rectangle with an area of 180 square meters. Walking right around the edge is 54 meters.

How long are its two sides?

Why

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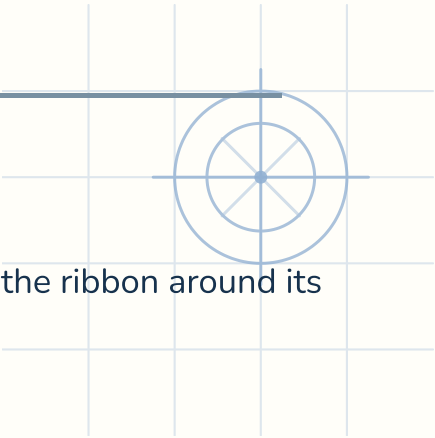
___ and ___



Name: _____

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Find the two side lengths. Show how you worked them out.



3

A poster is a rectangle. Its face is 117 square centimeters, and the ribbon around its border is 44 centimeters.

How long are its two sides?

Why

_____ and _____

4

A poster is a rectangle. Its face is 130 square centimeters, and the ribbon around its border is 46 centimeters.

How long are its two sides?

Why

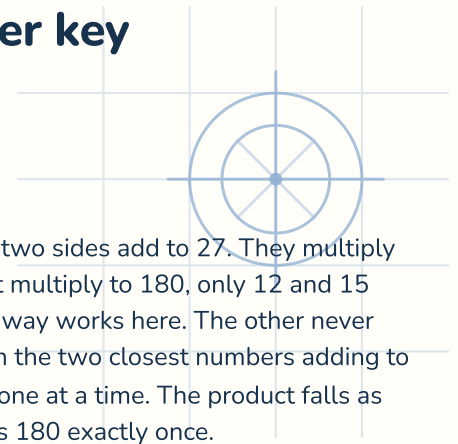
_____ and _____



Area & perimeter puzzles · Sides to 15 — Answer key

If they are stuck

- The perimeter counts every side twice. What is half of it?



1. Half of 36 is 18, so the two sides add to 18. They multiply to 80. Of the 5 pairs that multiply to 80, only 8 and 10 add to 18. More than one way works here. The other never lists the factors: start from the two closest numbers adding to 18, then step them apart one at a time. The product falls as they separate, so it passes 80 exactly once.

3. Half of 44 is 22, so the two sides add to 22. They multiply to 117. Of the 3 pairs that multiply to 117, only 9 and 13 add to 22. More than one way works here. The other never lists the factors: start from the two closest numbers adding to 22, then step them apart one at a time. The product falls as they separate, so it passes 117 exactly once.

2. Half of 54 is 27, so the two sides add to 27. They multiply to 180. Of the 9 pairs that multiply to 180, only 12 and 15 add to 27. More than one way works here. The other never lists the factors: start from the two closest numbers adding to 27, then step them apart one at a time. The product falls as they separate, so it passes 180 exactly once.

4. Half of 46 is 23, so the two sides add to 23. They multiply to 130. Of the 4 pairs that multiply to 130, only 10 and 13 add to 23. More than one way works here. The other never lists the factors: start from the two closest numbers adding to 23, then step them apart one at a time. The product falls as they separate, so it passes 130 exactly once.