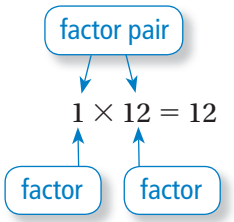
REVIEW: Factors of Whole Numbers

Name _____

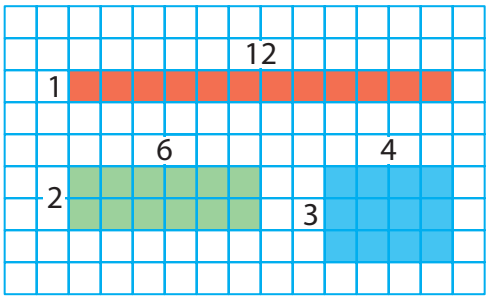
Key Concept and Vocabulary



$2 \times 6 = 12$
$3 \times 4 = 12$

Visual Model

The side lengths of rectangles with an area of 12 square units represent the factor pairs for 12.



A 1×12 rectangle and a 12×1 rectangle both give the factor pair 1 and 12.

Skill Examples

1. Factors of 1: 1
2. Factors of 8: 1, 2, 4, 8
3. Factors of 7: 1, 7
4. Factors of 15: 1, 3, 5, 15
5. Factors of 29: 1, 29

Application Example

6. A car show director wants to organize 24 cars into a rectangular array. How many different arrays can he make?

There are 4 factor pairs for 24.

You can use each factor pair to make 2 arrays.

$4 \times 2 = 8$

∴ He can make 8 different arrays.

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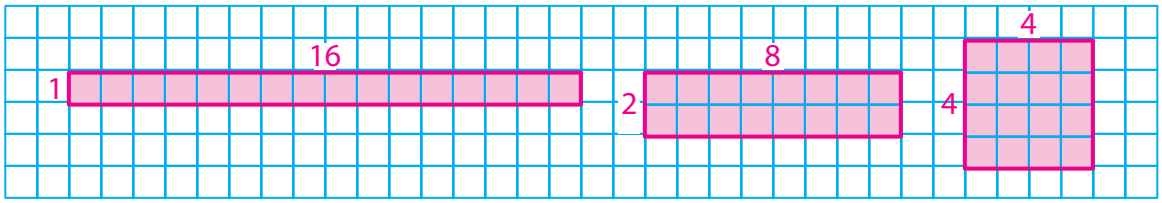
Check your answers at BigIdeasMath.com.

7. Draw rectangles to find the factor pairs for 16.



1 and 16, 2 and 8, 4 and 4

Find the factor pairs for the number.

8. 6 1 and 6, 2 and 3
9. 11 1 and 11
10. 30 1 and 30, 2 and 15, 3 and 10, 5 and 6

List the factors of the number.

11. 9 1, 3, 9
12. 20 1, 2, 4, 5, 10, 20
13. 18 1, 2, 3, 6, 9, 18

14. **STEPPING STONE** You want to organize 10 pebbles into a rectangular array on a stepping stone. How many different arrays can you make? 4 different arrays

15. **POSTERS** You have 40 posters to hang in a rectangular array on a wall. You do not have room for more than 8 posters in each row or column. What are the possible numbers of posters you can hang in each row? Explain. 5 to 8 posters; The factor pairs of 40 are 1 and 40, 2 and 20, 4 and 10, and 5 and 8. Five and eight are less than or equal to 8.