

MY Homework

Lesson 5

Relate Area and Perimeter

Homework Helper




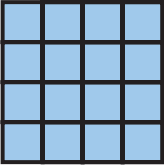


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A rectangle has a perimeter of 16 units. What is its greatest possible area?



1 Draw all of the possible rectangles with a perimeter of 16.

| Drawing | Rectangle Dimensions | Area |
|--|---------------------------------|-----------------------|
| 1  7 $1 + 7 + 1 + 7 = 16$ | 1×7 (or 7×1) | $A = 7$ square units |
| 2  6 $2 + 6 + 2 + 6 = 16$ | 2×6 (or 6×2) | $A = 12$ square units |
| 3  5 $3 + 5 + 3 + 5 = 16$ | 3×5 (or 5×3) | $A = 15$ square units |
| 4  4 $4 + 4 + 4 + 4 = 16$ | 4×4 | $A = 16$ square units |

If you reverse the dimensions of a rectangle, it will still have the same area.

2 Compare the areas of the rectangles. The greatest area is 16 square units.

So, 16 square units is the greatest possible area for a rectangle whose perimeter is 16 units.

Practice


Draw two possible rectangles for each perimeter.
Find the area of each.

1. 20 units

2. 8 units



Problem Solving

3. **PRACTICE**  **Use Number Sense** Tomás drew a rectangle with an area of 6 square centimeters. What is the greatest possible perimeter for this rectangle?

4. Danica has laid out floor tiles so they form a rectangle with a perimeter of 18 inches. What is the difference between the greatest and least possible areas of the rectangle?

5. A rectangle has an area of 30 square meters and a perimeter of 34 meters. What are the dimensions of the rectangle?

My Work!

Test Practice

6. A square has a perimeter of 28 feet.
What is its area?
- (A) 45 square feet (C) 49 square feet
(B) 48 square feet (D) 50 square feet