## Lesson 1: Accessing Areas and Pondering Perimeters

* Let’s think about rectangles.

### 1.1: Which One Doesn’t Belong: Quadrilaterals

Which one doesn’t belong?

A



B



C



D



### 1.2: Inspect Some Rectangles

Here are some rectangles.



1. Which rectangle has the greatest perimeter?
2. Which rectangle has the greatest area?
3. Find a rectangle with the same perimeter, but an even greater area than the previous answer.
4. For the remaining questions, tables are provided to organize your work. Rectangle D has a perimeter of 32 units.
   1. Find the side lengths of three different possible rectangles that have this perimeter.
   2. Find a pair of side lengths for rectangle D that give the greatest area in square units.
   3. Find a pair of side lengths for rectangle D that give the smallest area in square units.

|  |  |  |  |
| --- | --- | --- | --- |
| * + length (units) | * + width (units) | * + perimeter (units) | * + area (square units) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Rectangle E has an area of 36 square units.
   1. Find 3 pairs of side lengths that give this area.
   2. Find a pair of side lengths for rectangle E that give the greatest perimeter in whole-number units.
   3. Find a pair of side lengths for rectangle E that give the smallest perimeter in whole-number units.

|  |  |  |  |
| --- | --- | --- | --- |
| * + length (units) | * + width (units) | * + perimeter (units) | * + area (square units) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### 1.3: Inspect Some Tables

Here are two tables. The first shows some measurements for Rectangle A, with a side length of 5 cm. The second shows some measurements of Rectangle B, which is a square.

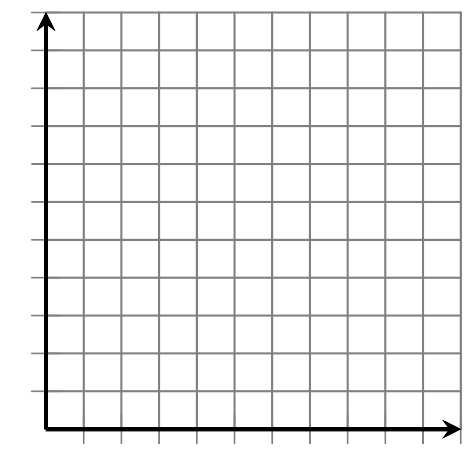
1. Complete the table for Rectangle A and be prepared to explain your reasoning.

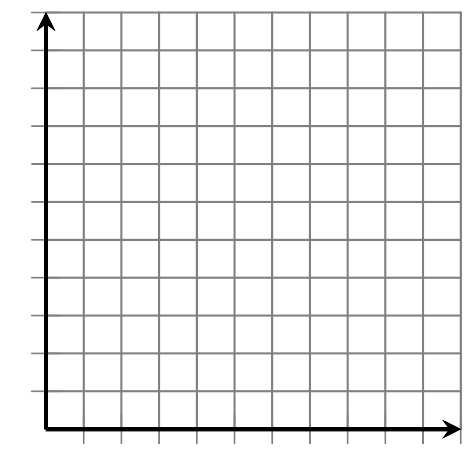
|  |  |  |  |
| --- | --- | --- | --- |
| * length (cm) | * width (cm) | * perimeter (cm) | * area (sq cm) |
| * 5 | * 1 |  |  |
| * 5 | * 2 |  |  |
| * 5 | * 4 |  |  |
| * 5 |  | * 20 |  |
| * 5 |  |  | * 40 |
| * 5 |  | * 28 |  |
| * 5 |  |  | * 50 |
| * 5 |  |  |  |

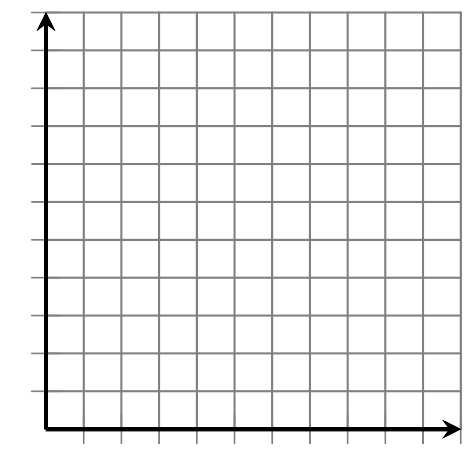
1. Complete the table for Rectangle B and be prepared to explain your reasoning.

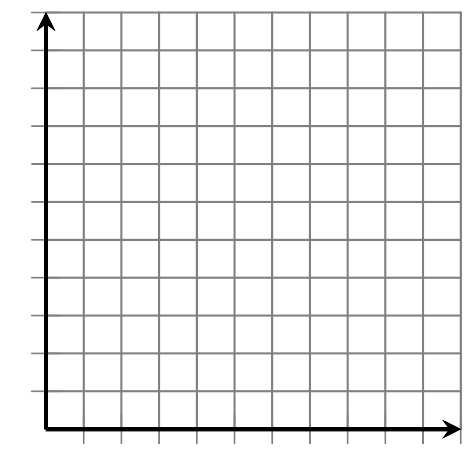
|  |  |  |  |
| --- | --- | --- | --- |
| * length (cm) | * width (cm) | * perimeter (cm) | * area (sq cm) |
| * 1 | * 1 |  |  |
| * 2 | * 2 |  |  |
| * 3 | * 3 |  |  |
| * 4 |  | * 16 |  |
|  | * 8 |  |  |
|  |  |  | * 100 |
|  |  |  |  |

1. Sketch the graph of each pair of quantities, where the width is plotted along the -axis.
   1. and the perimeter of Rectangle A
   2. and the area of Rectangle A
   3. and the perimeter of Rectangle B
   4. and the area of Rectangle B











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