

# GEOMETRY

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# PYTHAGOREAN THEOREM ACTIVITY

# FINDING AREAS

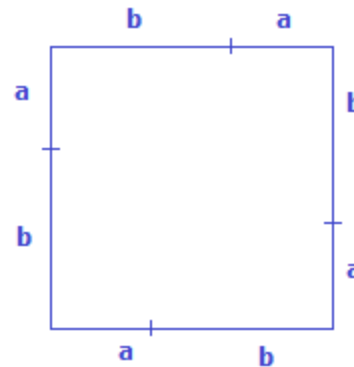
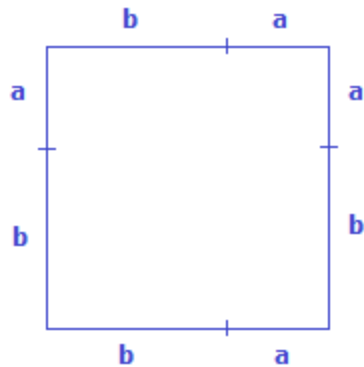
Find the areas of the figures drawn on the dot grid.  
Consider the horizontal and vertical distance between two adjacent dots to be 1 unit. The area of a square with side lengths of 1 unit is a 1 unit square.

Find the areas of problems 1-10 on the handout.  
Be prepared to describe your strategies.



# PROVING THE PYTHAGOREAN THEOREM

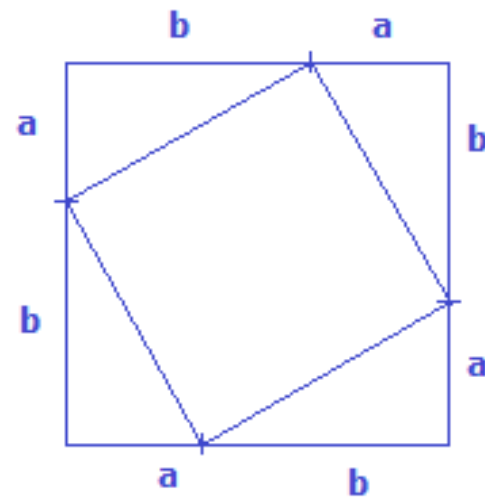
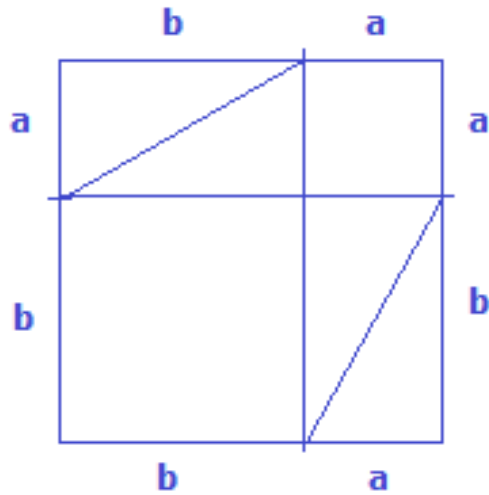
- Draw a right triangle and label the short leg  $a$ , the long leg  $b$ , and the hypotenuse  $c$ .
- Construct two squares (side by side) whose sides have length  $a + b$ .



- Dissect the squares by drawing lines for the triangle you drew.



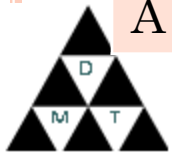
# PROVING THE PYTHAGOREAN THEOREM



# LENGTHS & SQUARES

- Use the dot paper to fill in the following table. Make a conjecture about your findings.

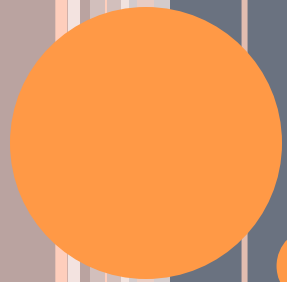
Length of leg 1	Length of Leg 2	Area of square on leg 1	Area of square on leg 2	Area of square on the hypotenuse
1	1	1	1	2
1	2			
2	2			
1	3			
3	3			
3	4			
A	B			



# THE RAMP

- A carpenter wants to build a handicap ramp over a set of steps that is 12 feet long and 5 feet high.
- How long will the ramp be?





# STRUCTURAL IDEAS

# THE STRUCTURE OF GEOMETRY

- Space (Describing the world around us)
  - Measuring
  - Maneuvering
    - Transformations
    - Locations
  - Boundaries
    - Defining or Describing Space (including visualization)
    - Dimensions
    - 2-d, 3-d
- Shapes
  - Attributes and properties
  - Composing/Decomposing
  - Congruency and similarity
    - Growing and Shrinking
    - Transformation

