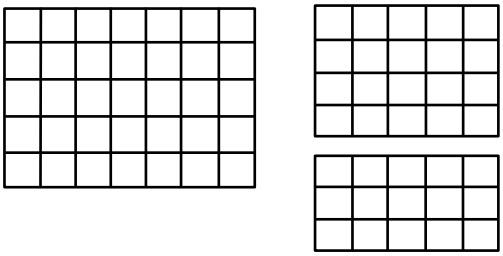
Name _____ Date _____

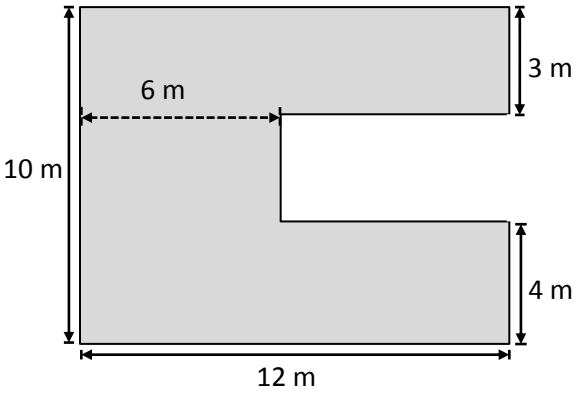
1. Sarah says the rectangle on the left has the same area as the sum of the two on the right. Pam says they do not have the same areas. Who is correct? Explain using numbers, pictures, or words.



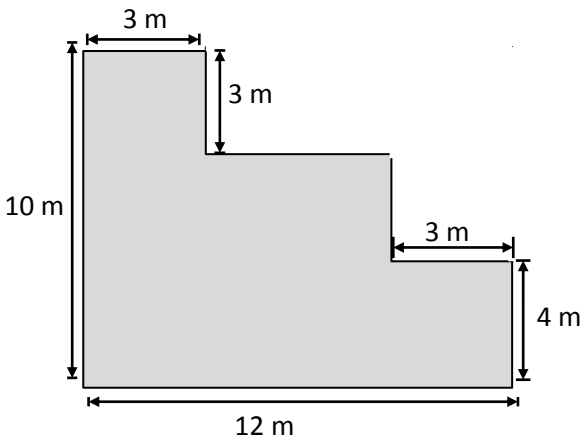
2. Draw three different arrays that you could make with 36 square-inch tiles. Label the side lengths on each of your arrays. Write multiplication sentences for each array to prove that the area of each array is 36 square inches.

3. Mr. and Mrs. Jackson are buying a new house. They are deciding between the two floor plans below.

House A

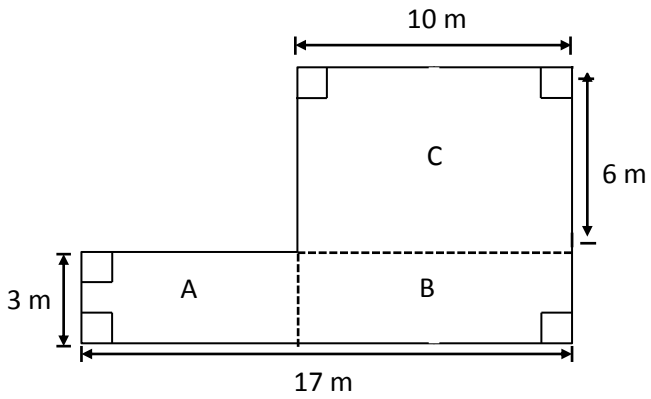


House B



Which floor plan has the greater area? Show how you found your answer on the drawings above. Show your calculations below.

4. Superior Elementary School uses the design below for their swimming pool.



a. Label the side lengths of Rectangles A and B on the drawing.

b. Find the area of each rectangle.

c. Find the area of the entire pool. Explain how you found the area of the pool.

End-of-Module Assessment Task Standards Addressed	Topics A–D

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.

a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.

b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.

3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

3.MD.7 Relate area to the operations of multiplication and addition.

a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Evaluating Student Learning Outcomes

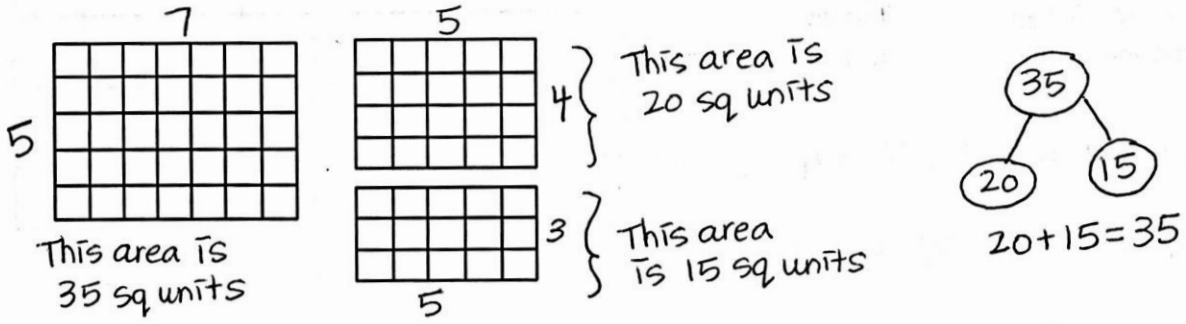
A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student CAN do now and what they need to work on next.

A Progression Toward Mastery				
Assessment Task Item and Standards Assessed	**STEP 1** **Little evidence of reasoning without a correct answer.** **(1 Point)**	**STEP 2** **Evidence of some reasoning without a correct answer or with a partially correct answer in a multi-step question.** **(2 Points)**	**STEP 3** **Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.** **(3 Points)**	**STEP 4** **Evidence of solid reasoning with a correct answer.** **(4 Points)**
1 **3.MD.7c** **3.MD.7d**	Response demonstrates little or no evidence of reasoning without a correct answer.	Student identifies that Sarah is correct, demonstrating evidence of limited reasoning to support the answer.	Student identifies that Sarah is correct. Response shows evidence of accurate reasoning to support the answer using at least one representation.	Student identifies that Sarah is correct. Explanation shows evidence of solid reasoning using multiple representations.
2 **3.MD.5b** **3.MD.6** **3.MD.7a** **3.MD.7b**	Student attempts, but is unable to draw any correct arrays with labels. Multiplication sentences are not shown.	Student correctly draws and labels one array. Side lengths are labeled without units. A multiplication sentence is shown.	Student correctly draws and labels two different arrays. Side lengths are labeled in inches. Multiplication sentences are shown for those two arrays.	Student correctly draws and labels three different arrays. Side lengths are labeled in inches. Possible arrays: ▪ 1 × 36 ▪ 2 × 18 ▪ 3 × 12 ▪ 4 × 9 ▪ 6 × 6 Correct multiplication sentences are shown for each array drawn.
3 **3.MD.7d** **3.MD.7b**	Response demonstrates little or no evidence of reasoning without a correct answer.	Student miscalculates one area. Student may identify that House A has the greater area with limited reasoning.	Response demonstrates correct calculations and area. Student identifies that House A has the greater area.	Student demonstrates correct area calculations with answers: ▪ House A = 102 sq meters ▪ House B = 84 sq meters Explanation identifies that House A has the greater area. Response provides evidence of solid reasoning.

A Progression Toward Mastery				
4 **3.MD.5** **3.MD.7b** **3.MD.7d**	Attempts, but is unable to answer any part of the question correctly.	Student: a. Labels length and width correctly, but without units. b. Calculates at least two areas correctly. c. May miscalculate the total area.	Student answers Parts (a) and (b) correctly, but may miscalculate the total area.	Student correctly: a. Labels length and width of rectangles A and B, including units: ▪ A = 3 m × 7 m ▪ B = 3 m × 10 m b. Calculates the area of each rectangle as: ▪ A = 21 sq meters ▪ B = 30 sq meters ▪ C = 60 sq meters c. Calculates the total area as 111 sq meters.

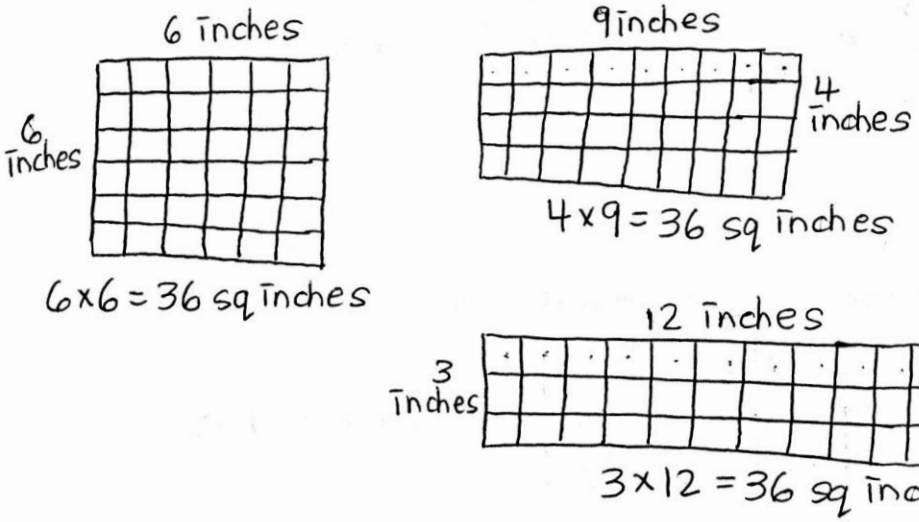
Name Gina Date

1. Sarah says the rectangle on the left has the same area as the sum of the two on the right. Pam says they do not have the same areas. Who is correct? Explain using numbers, pictures, or words.



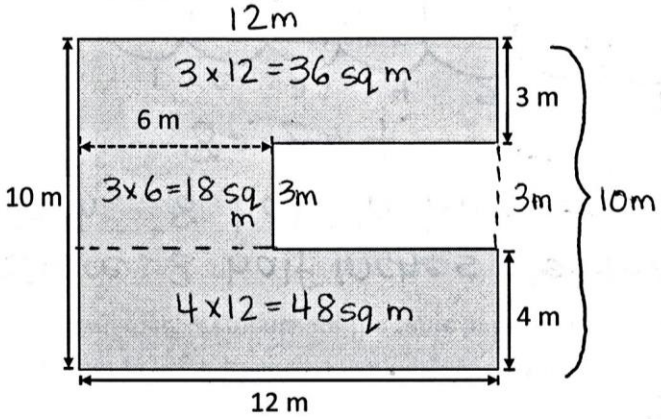
Sarah is right. The two on the right add up to 35 sq units, which is the area of the one on the left.

2. Draw three different arrays that you could make with 36 square-inch tiles. Label the side lengths on each of your arrays. Write multiplication sentences for each array to prove that the area of each array is 36 square inches.

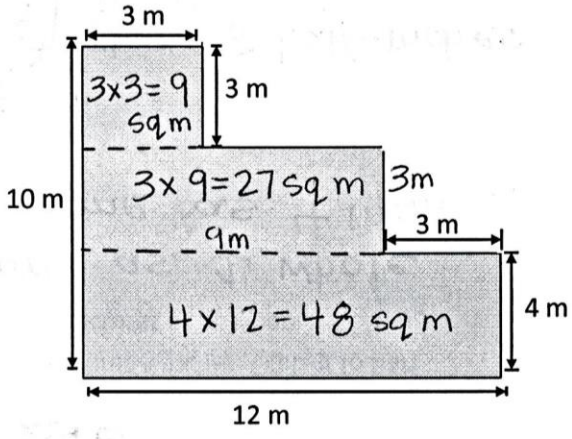


3. Mr. and Mrs. Jackson are buying a new house. They are deciding between the two floor plans below.

House A



House B



Which floor plan has the greater area? Show how you found your answer on the drawings above. Show your calculations below.

House A:

36 + 18 + 48

40 + 14

54 + 48

52 + 50

= 102 square meters

House B:

9 + 27 + 48

6 + 30

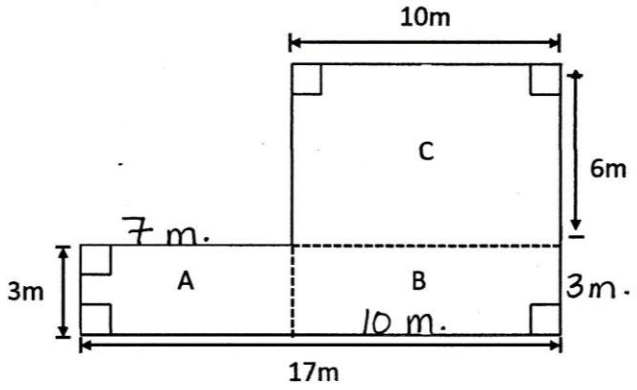
36 + 48

34 + 50

= 84 square meters

Mr. and Mrs. Jackson should buy House A, because it has a greater area than House B. House A is 102 square meters and House B is only 84 square meters.

4. Superior Elementary School uses the design below for their swimming pool.



a. Label the length and width of rectangles A and B on the drawing.

b. Find the area of each rectangle.

A → 7x3 = 21 square meters

B → 10x3 = 30 square meters

C → 10x6 = 60 square meters

c. Find the area of the entire pool. Explain how you found the area of the pool.

I can add the areas of all 3 parts to find the area of the whole pool.

21+30+60

21 + 90

111 square meters