

ISA Math Performance Assessment Algebra– TINA’S QUILT SQUARES

Researchers from Teachers College, Columbia University and the Institute for Student Achievement (ISA) are working with your school to learn about how students in the ISA schools are improving in math and writing.

It is important to try your best on this assessment. The scores from this assessment will be used by your school to help improve its math instruction.

This task has 9 pages. Look through the entire assessment before beginning. You may work on the problems in any order you like. You may use a calculator on this assessment.

When we score your assessment, we will award full and partial credit based on the work you show. Please make sure to show all your work on the assessment itself.

You should have plenty of time to complete the assessment. Your teacher will tell you when half the time is over.

If you have any questions during the assessment, or if you need more paper, please raise your hand.

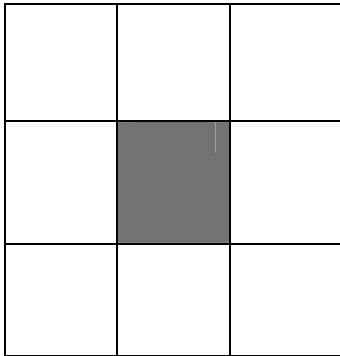
Please try your hardest!

Please write your name below, then turn the page to continue.

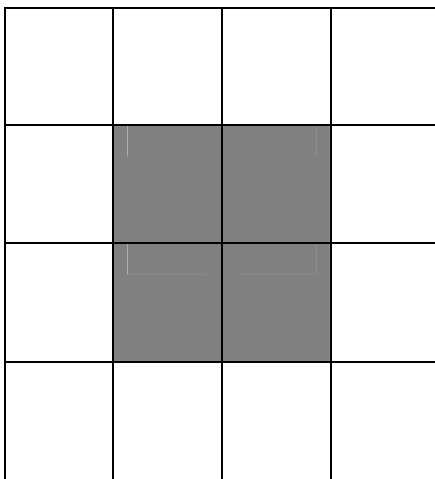
Name: _____

isa Institute for Student Achievement
Tina's Quilt Squares

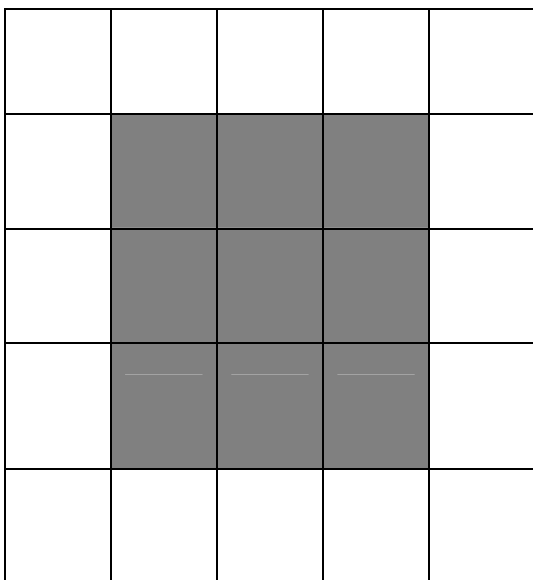
Tina's grandmother designs beautiful quilts. Tina uses white and grey square tiles to create models of grandma's quilt squares. Look at the three quilt square patterns below.



Quilt Square 1



Quilt Square 2



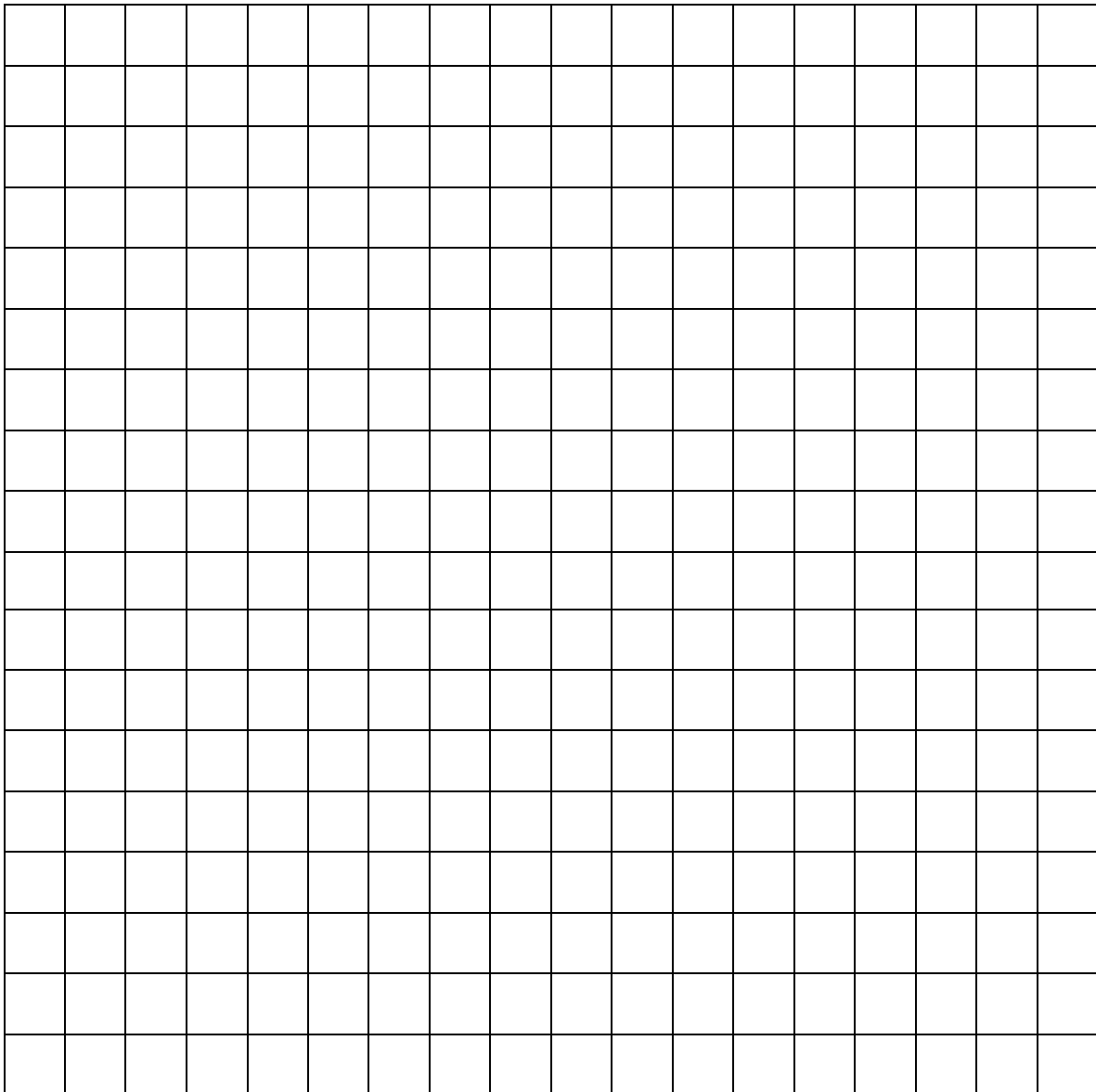
Quilt Square 3

A. How many grey and white tiles will Tina need to build Quilt Square 4?

of Grey Tiles _____

of White Tiles _____

On the grid below, make a diagram of Quilt Square 4



B. How many grey tiles will Tina need to build Quilt Square # 7?
Show or explain your mathematical thinking.

C. How many white tiles will Tina need to build Quilt Square # 9?
Show or explain your mathematical thinking.

D. What is the total number of tiles in Quilt Square # 12?
Show or explain your mathematical thinking.

E. How many grey, white and total number of tiles does Tina need to build Quilt Square # N , where N can be any number? (Hint: You may want to create In and Out Tables, look at the patterns and make a generalization for each table.)

F. Predict the total number of tiles for Quilt Square # 100.