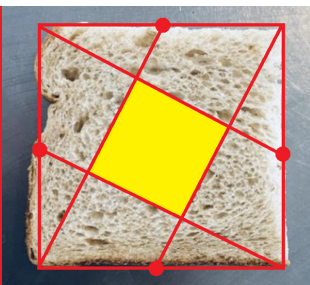# The Square Root of Two: Solutions

puzzle #1

In this picture, the square piece of bread has area 1.

Lines are drawn from each corner of the square to middle points of the sides of the square as shown.

What is the area of the yellow square formed in the middle?

puzzle #2

This time I've drawn lines across my square piece of bread to thirdway points along its sides.

What is the area of one of the yellow squares formed in the middle?

ANSWERS TO PUZZLES 1 and 2:

Cover the kitchen counter with sandwiches!

Then you see that, for the first puzzle, the each piece of bread is covered by five little squares (four of them are split apart) and so each little square has area one-fifth the area of the bread.

In the second puzzle, each bread piece is covered by 10 little squares and so each little square has area one-tenth.

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The NMF Weekly is written by mathematician Dr. James Tanton as a resource for friends and fans of the 2021 National Math Festival.

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