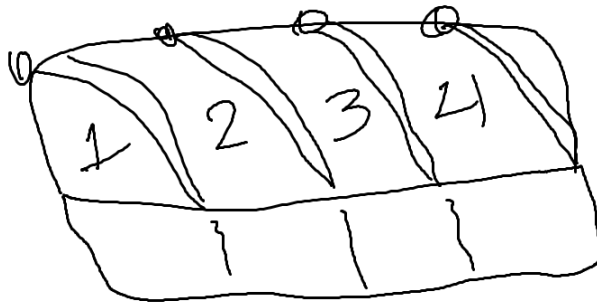


Chapel Hill Math Circle
Beginners Group (1-3)
January 16, 2016

1. Four siblings—Amy, Bob, Crystal, and Dave—sat on the back seat of their 12-passenger van (which had four seats with their seatbelts).
 - Bob and Dave took the corner seats.
 - Crystal's seat number and Bob's seat number were bigger than Amy's seat number.

Where did each of them seat?



2. Consider 3 squares of the same size. We want to create shapes with them so that each square is completely touching at least one other square along an entire edge. How many different shapes can you make?
3. Consider 4 squares of the same size. We want to create shapes with them so that each square is completely touching at least one other square along an entire edge. How many different shapes can you make? (These are the tetrominoes!)
4. IF TIME: If there are 10 pigeons who want to have a home (let's call it a pigeonhole), but there are only 9 holes. What can you say about the way they can choose the holes if every pigeon would like its own pigeonhole?