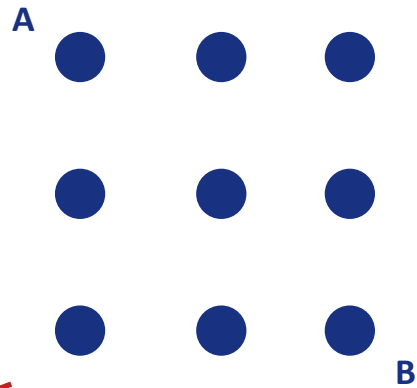


Brian's pegboard

Brian has a pegboard with 9 pegs in a 3 by 3 square array (see the diagram).



He also has a piece of string that he wants to put from the top left hand peg A, to the bottom right hand peg B, so that it touches all of the other pegs on the way only once.

If the string is never put diagonally between the pegs, how many different ways can Brian string up his pegboard?