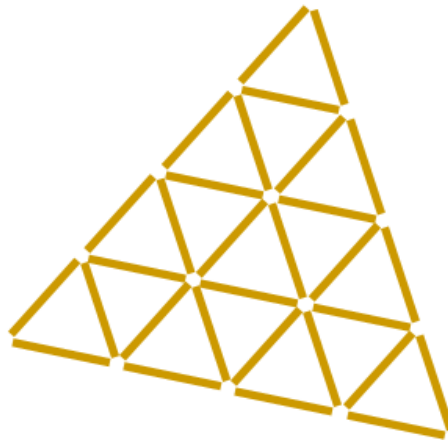


Termite Terrorists

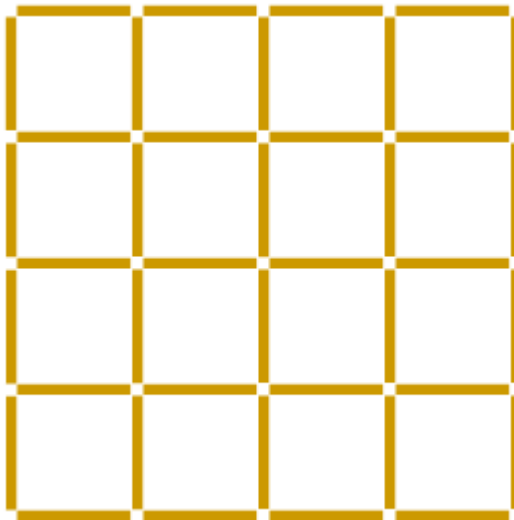
A colony of termites has attacked a house by carving out passageways through the floorboards. The damage done is proportional to the number of triangles and right now there are 27 of them: 16 small, 7 medium, 3 large, and 1 huge.

Which of the 15 intersections would you fill to minimize the number of triangles?
Is your solution unique?



If you wanted to get rid of all triangles; how many intersections would you have to fill?

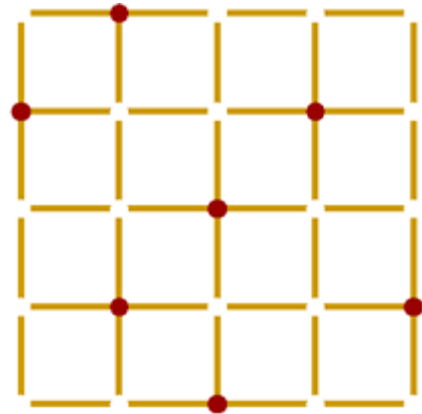
Extensions:



Parker& Jordan from Bishop Pinkham asked people to destroy all the squares by filling in the fewest number of intersections.

On the right is an answer using 7 intersections. Notice that each square goes through one of the red intersections.

Solve their problem using only 6 intersections.



It took the termites 30 passageways to create 27 triangles. Prove that the number of triangles are always less than the number of passageways, or give a counter-example.

Create your own problem on your own grid. For more grid patterns see one of these web sites: mathworld or wikipedia.

Credits:

Theme, Problem and Extensions by Gord! © Galileo