Karl Gerstner (1930) is a Swiss artist interested in the geometric islamic art. In Fez, Morrocco, bought a KAMAL ALÍ design, Kamal Alí was a construction worker .Later, back at home, Gerstner entered the design into a computer software and got amazed when he saw it orginated a huge number of different patterns formed by many geometric structures and shapes. So he didn't buy a simple design, but a pattern which could generate an ilimited number of tiles containing different compositions, it was a structural ground, the seed that was kept by andalucies during the hispanic-muslims exile and extermination.

CONSTRUCTION

1st- Draw a square and divide two oposite sides in 19 equal parts so we can we traze paralels to the other sides through the divisions.
2nd- Repeat the 1st step trazing paralels to the other two sides.
3rd- Keep only the five outer paralels to each side. That way we get a central square.
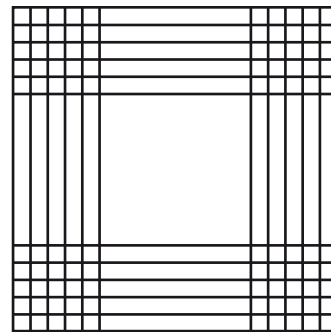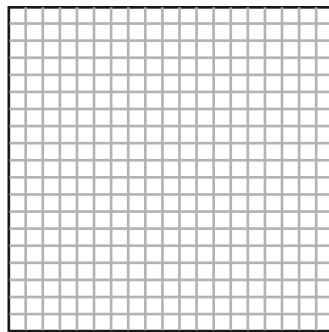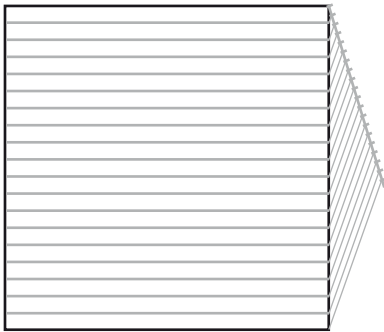
We can make this process faster if we draw a 19 cm sided square, this is a good size for an A4 sheet of paper.

We'll only need to make five marks of one cm. for each one of the square corners to traze the paralels.

4th- PAYING ATENTION TO THE INNER SQUARE: Traze its diagonals and also a horizontal and a vertical lines through geometric center of the square determined by the two diagonals. Then inscribe a circle which is divided into eight portions.
5th- Draw an eight point star (skiping two vertices).
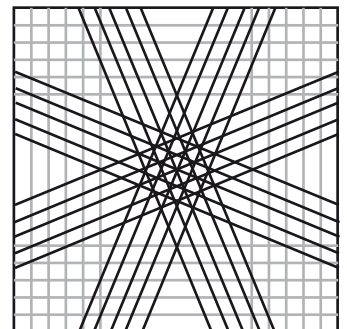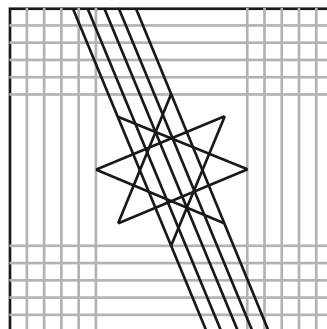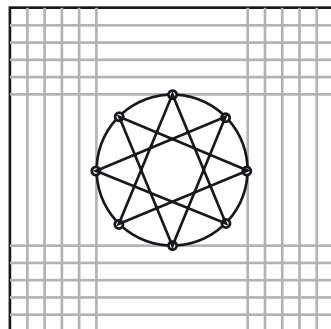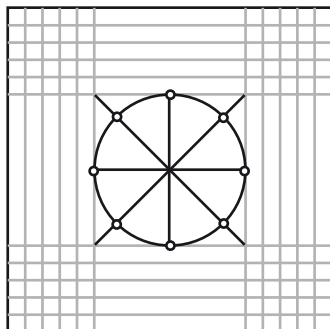
6th- Pick two paralel sides of the star and extend them to the edge of the outer square, that way you'll get four oblique bands crossing the whole square.
   From one side of one of those bands divide the distance in between the two edges in four equal parts trazing three paralel lines in between.
7th- Repeat the process (6th step) but for the other three oblique bands.
8th- Finally draw a second square but turned 45º from its center and repeat with it the 1st, 2nd and 3rd steps.

The result is the same model than Kamal Ali's original. In the original design, Kamal Ali trazed only two oblique perpendicular bands for the first square and later repeated the process for a second square wich is turn 45 degrees.
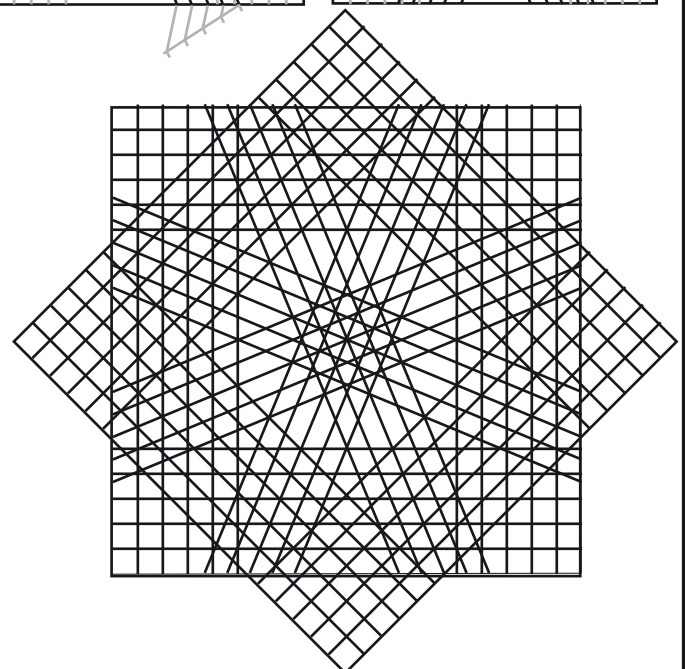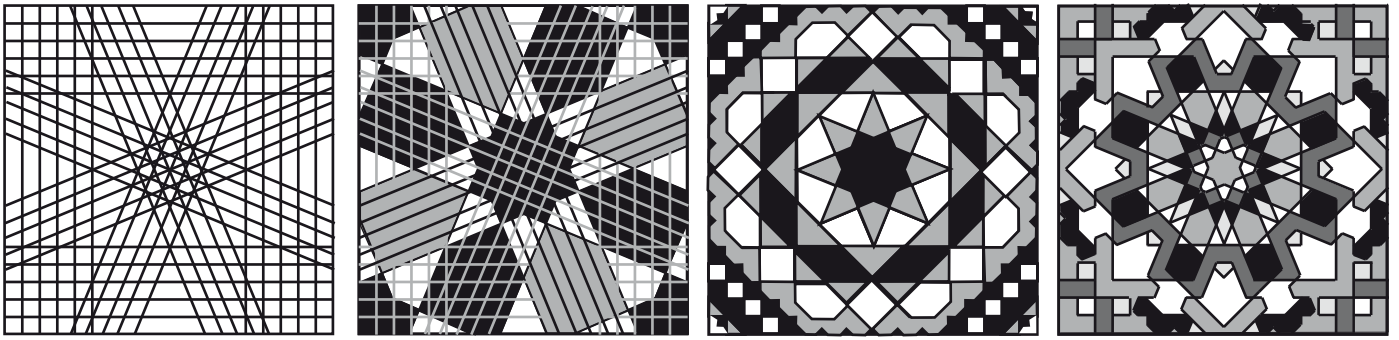
Above you can see three different designs (the simplest to the left and the most complex to the right) obtained from Kamal Ali pattern.

It's VERY IMPORTANT that you choose or make a SYMMETRIC (Reflexions of every shape you draw in the different sides or corners). Below you can see some drawings with three different ways of putting into practice the symmetries. Traze and dot lines show symmetry lines which originate the reflexions. This aspect of this type of design is very importat for matching the tiles so they create new coherent shapes.
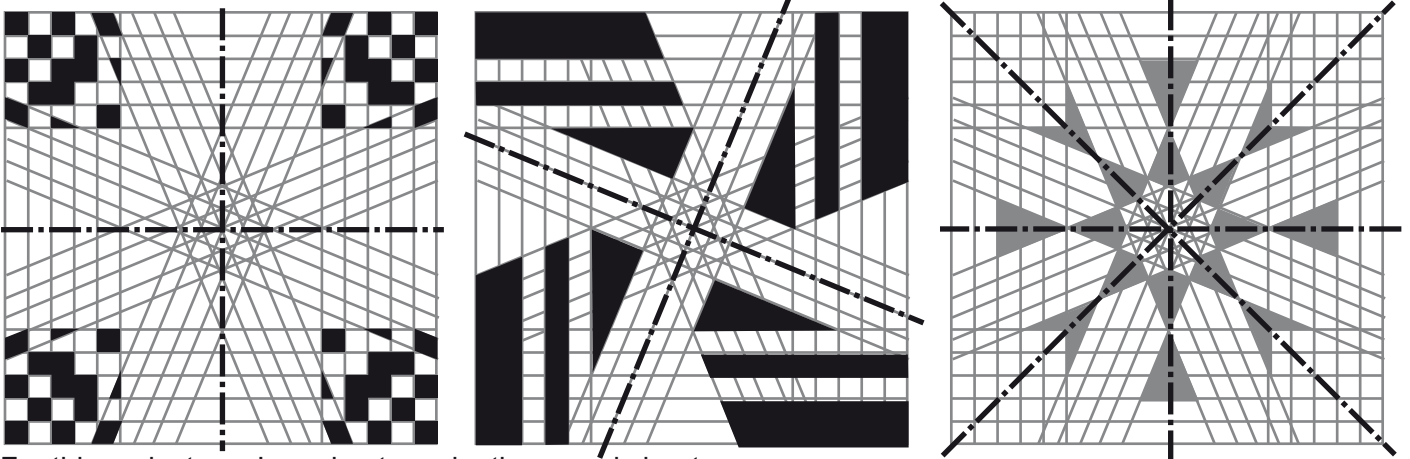
For this project you're going to make three worksheets:

1st- You're going to sketch six deigns with color markers in six independent tiles .
2nd- Out of the six tile designs you get, you have to choose the two that you like the most. You'll be right on time to fix some mistakes or re arrange anything you think that can be drawn or designed better.
3rd- The pattern: You choose, from the last worksheet, the tile design you like the most and repeat it (with no changes from one to another) using the given template.

Below you can see the upper deisgn repeated three times in horizontal direction and three more times in vertical direction.