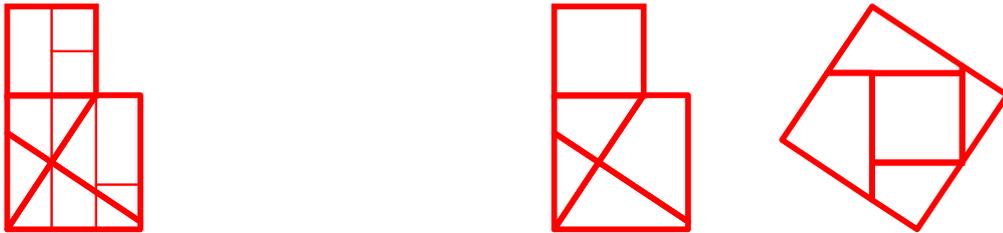


Avec le Puzzle Rouge

Puzzle créé par des élèves du lycée Marguerite à Verdun et présent en 2012 à Metz aux Journées Nationales de l'A.P.M.E.P.

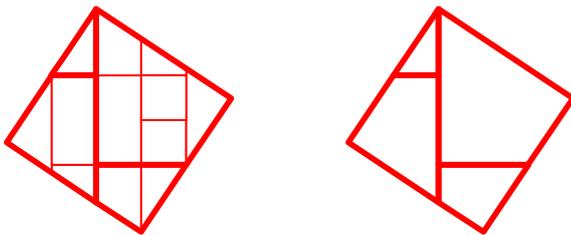
Avec les pièces du puzzle, il est possible de réaliser deux carrés. Je les appellerai par la suite « moyen carré » et « petit carré », le « grand carré » sera celui obtenu avec l'ensemble des pièces.

L'aspect « Théorème de Pythagore » :

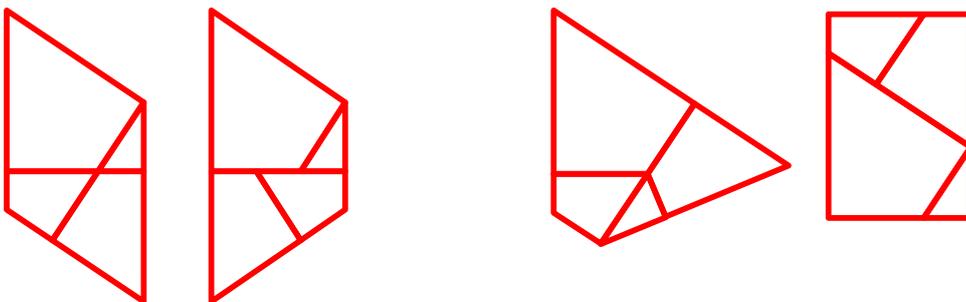


Les cinq pièces forment-elles un carré ? Des alignements sont à prouver. Le quadrilatère obtenu est-il un rectangle ? Est-il un losange ?

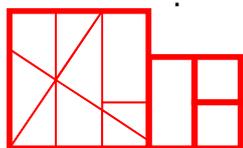
Du grand carré vers d'autres quadrilatères :



Comment prouver que j'ai obtenu un parallélogramme, un rectangle et deux trapèzes isocèles ?

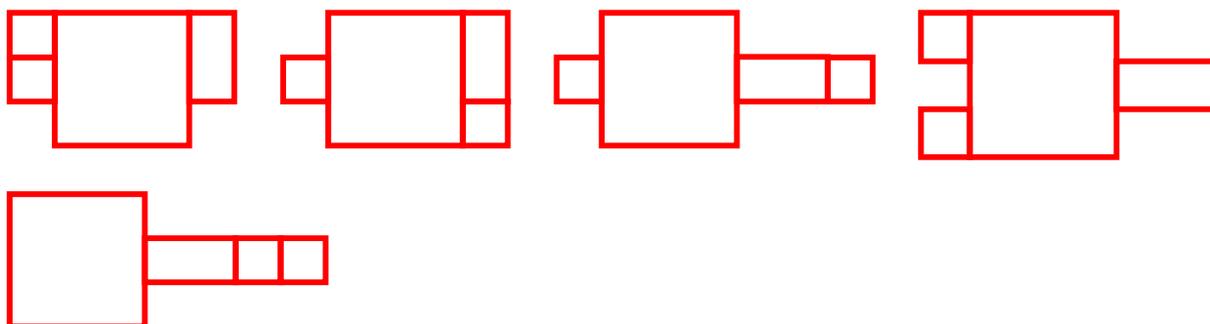


Les pièces du petit carré autour du moyen carré, pour obtenir des polygones admettant un ou plusieurs éléments de symétrie.

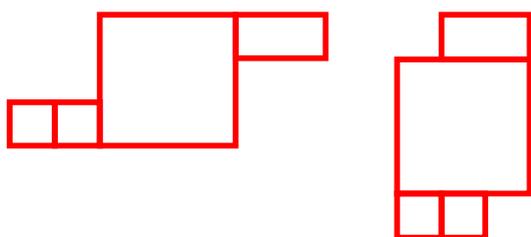


Quelques exemples (liste non exhaustive) :

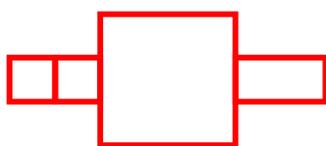
Pour un axe de symétrie :



Pour un centre de symétrie :

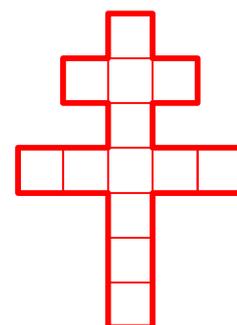


Pour deux axes de symétrie et un centre de symétrie :

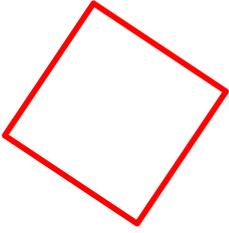


L'aspect « Croix de Lorraine » :

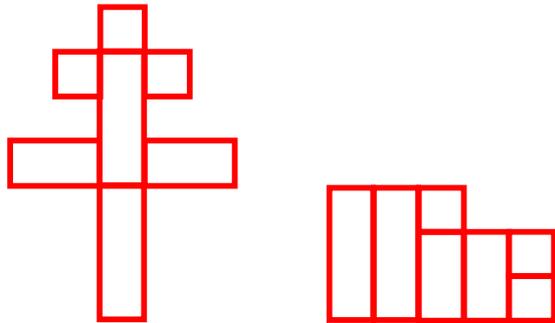
La croix de Lorraine peut être considérée comme formée de treize carreaux.



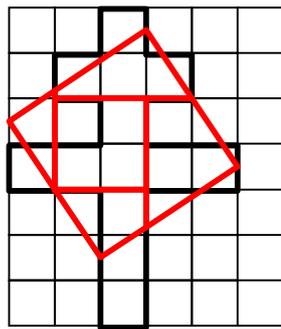
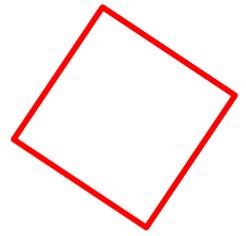
Comment la découper pour former un carré ?



Les petit et moyen carrés ainsi que la croix de Lorraine peuvent être recouvert par les mêmes carrés et rectangles.



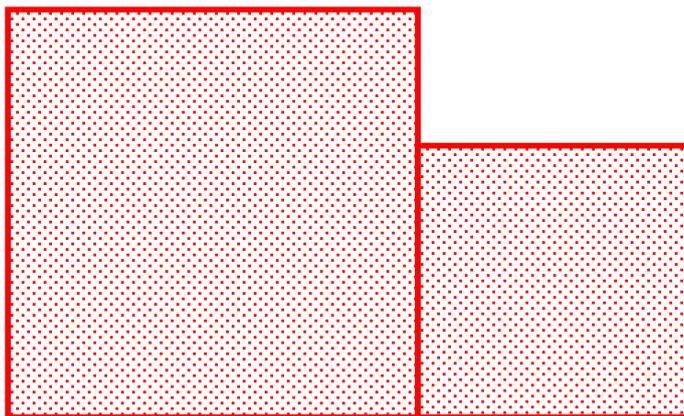
Reste à trouver un découpage pour qu'ils recouvrent le grand carré :



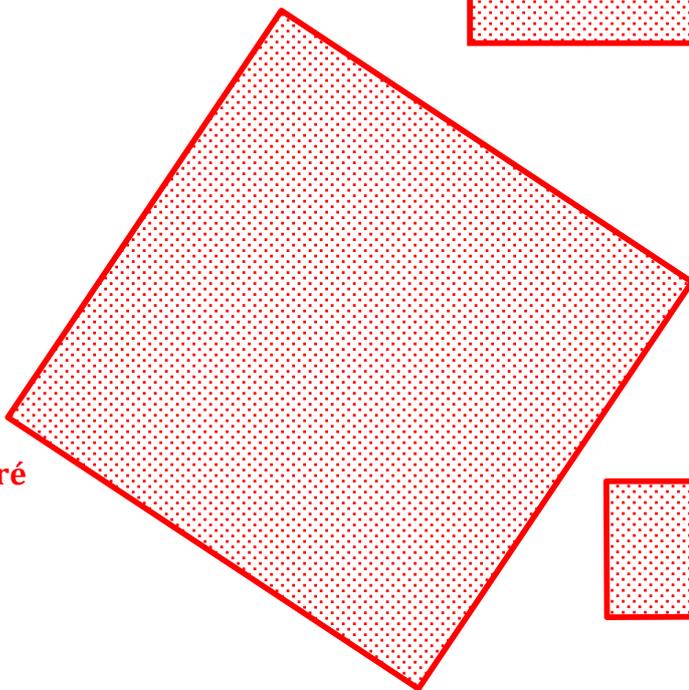
En superposant la croix de lorraine et le grand carré réalisé à l'aide du puzzle de Pythagore, la recherche de Puzzles « Croix de Lorraine » et « de Pythagore » est envisageable.

Des polygones obtenus avec les pièces du puzzle rouge :

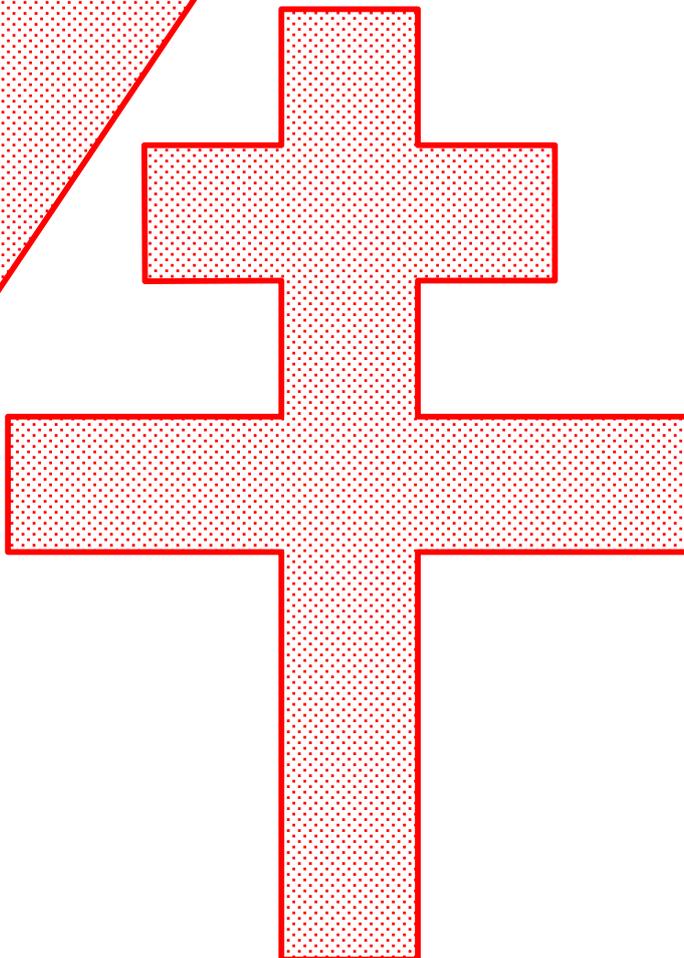
Deux carrés



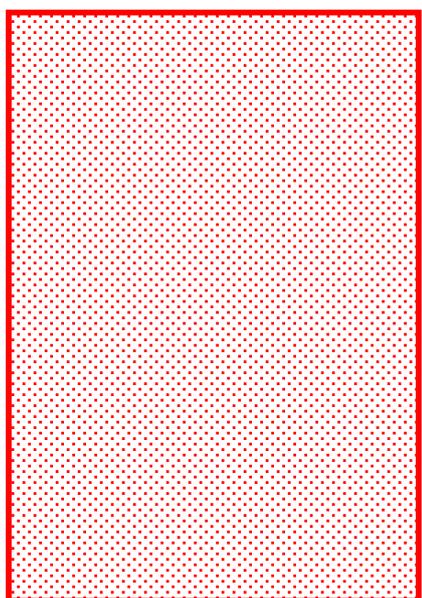
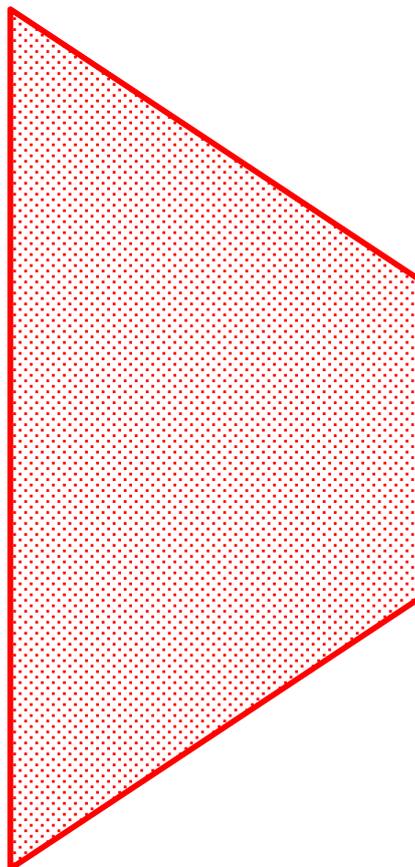
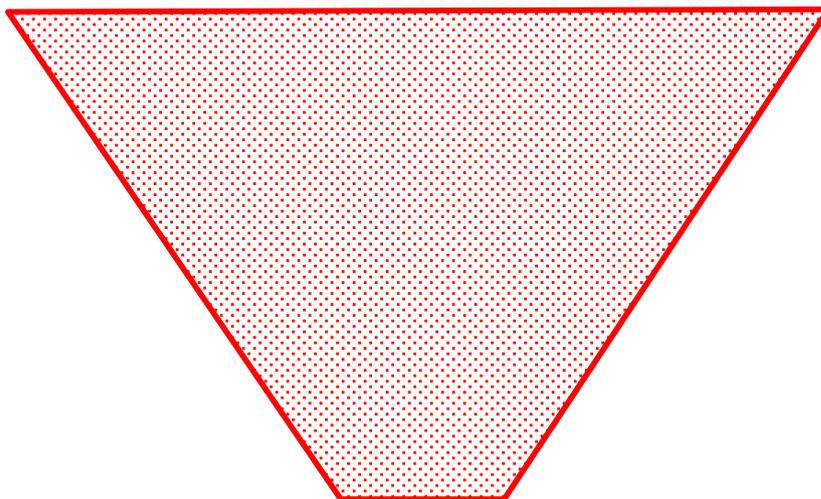
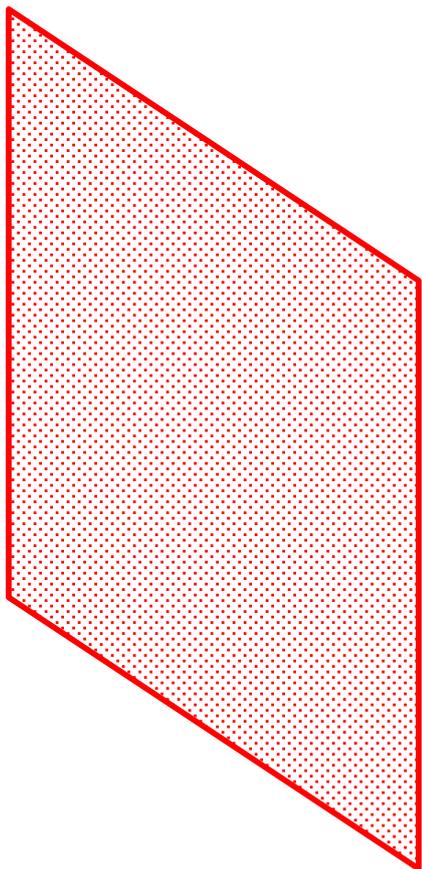
Un seul carré



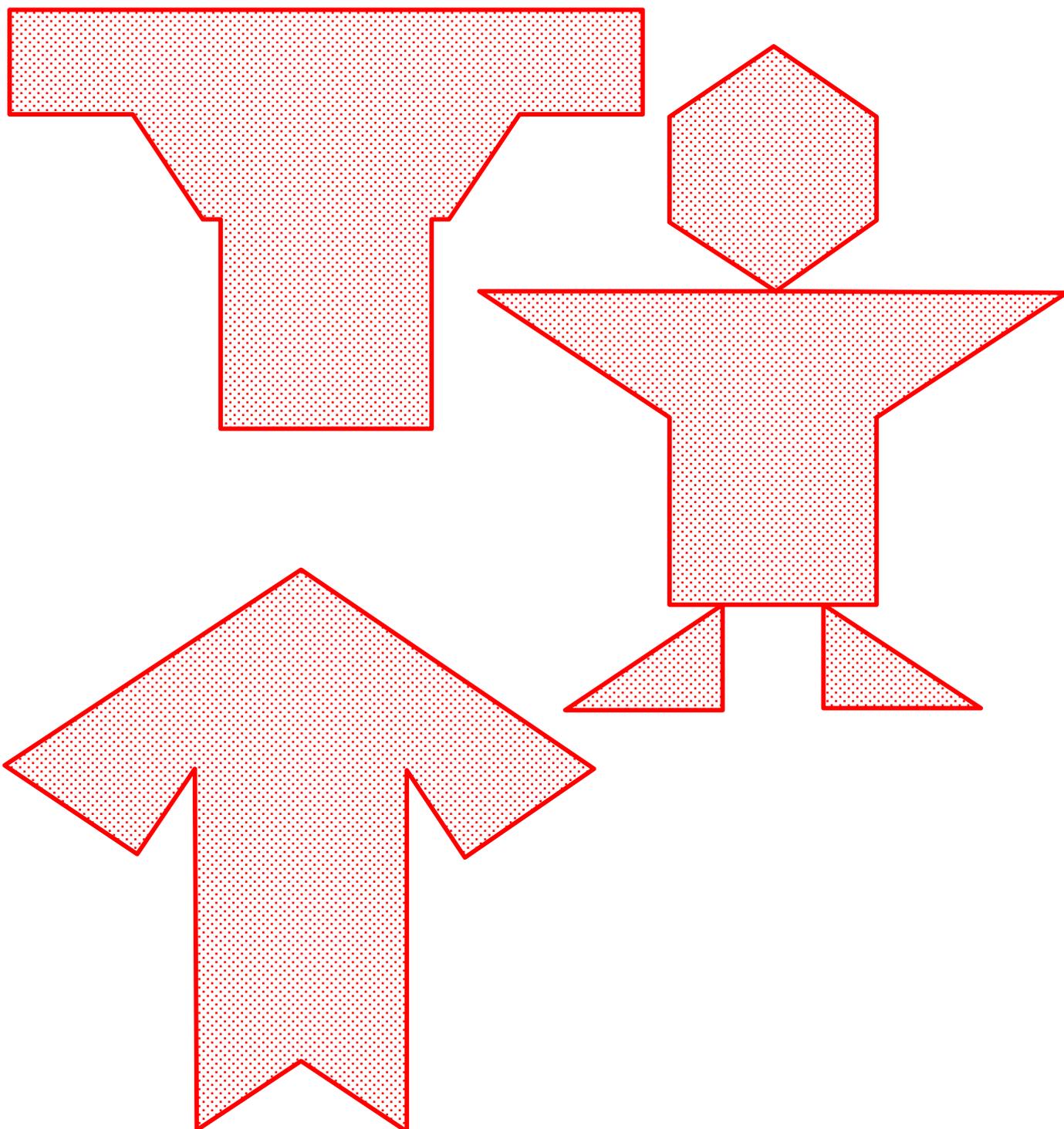
La croix de Lorraine



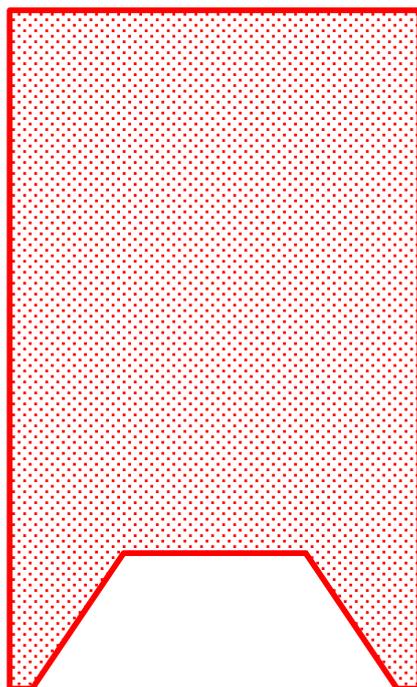
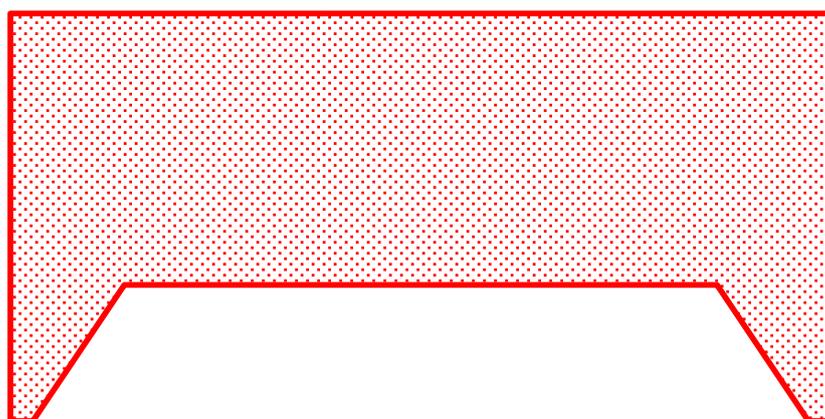
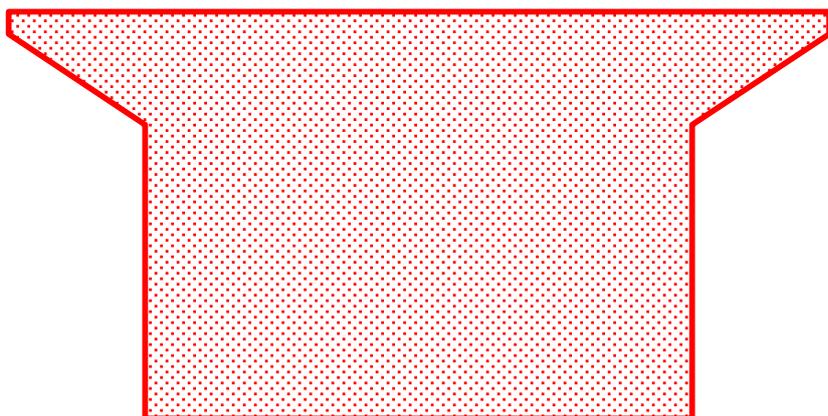
D'autres quadrilatères



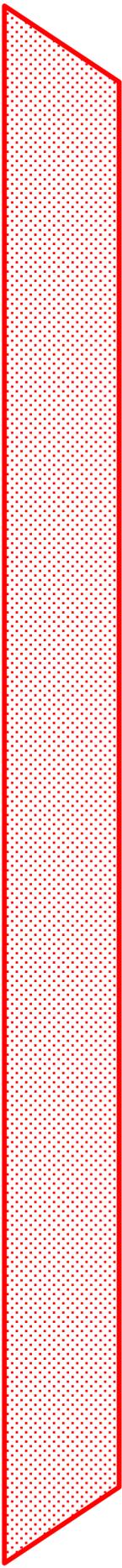
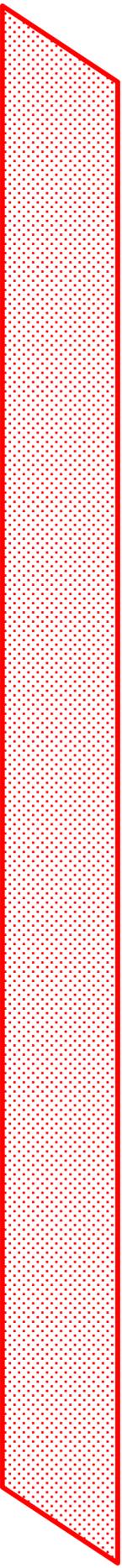
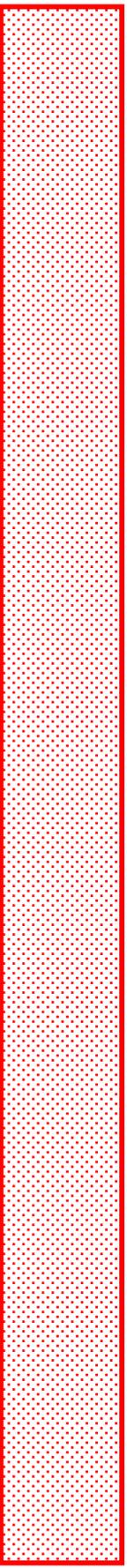
Des placements symétriques de pièces



Tables et commodes : du mobilier



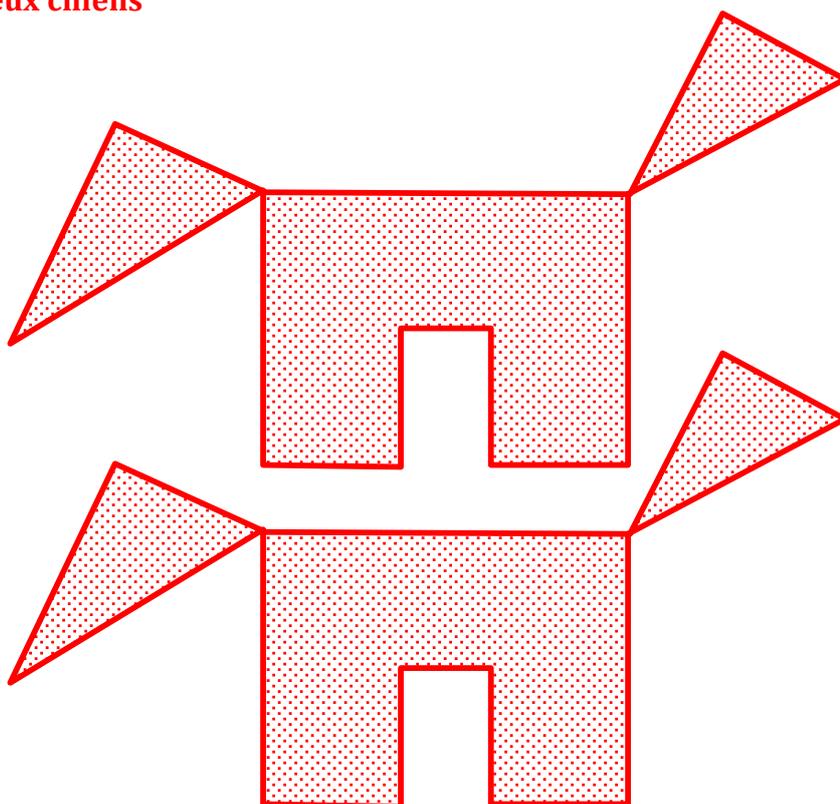
**Un rectangle, un parallélogramme et un trapèze
isocèle**



Deux trapèzes rectangles



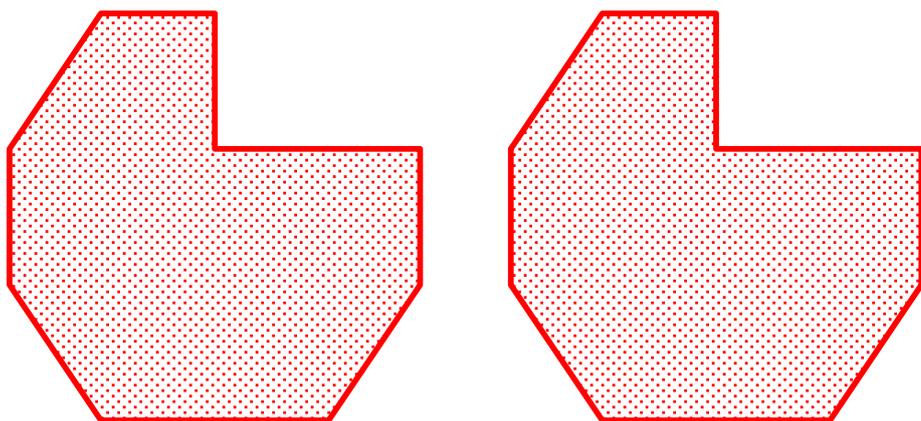
Deux chiens



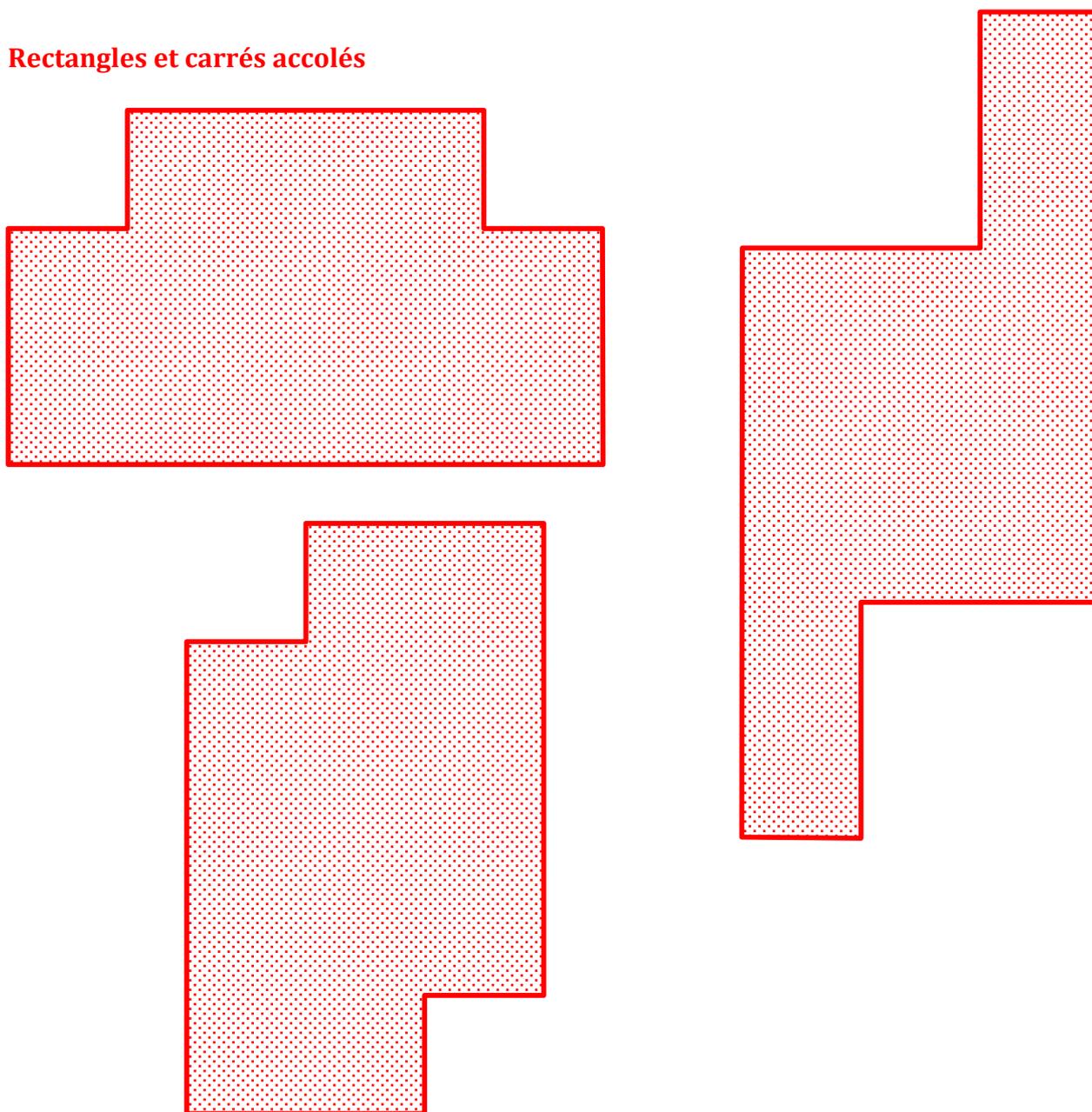
Deux hexagones

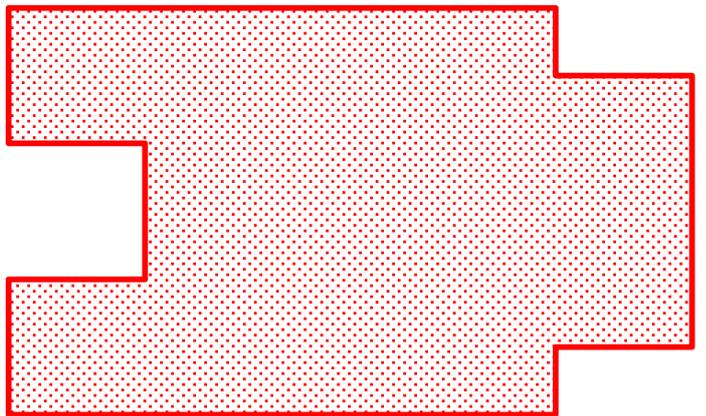
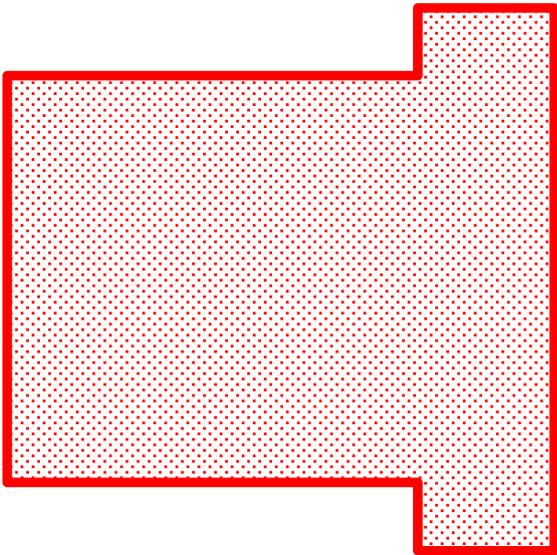
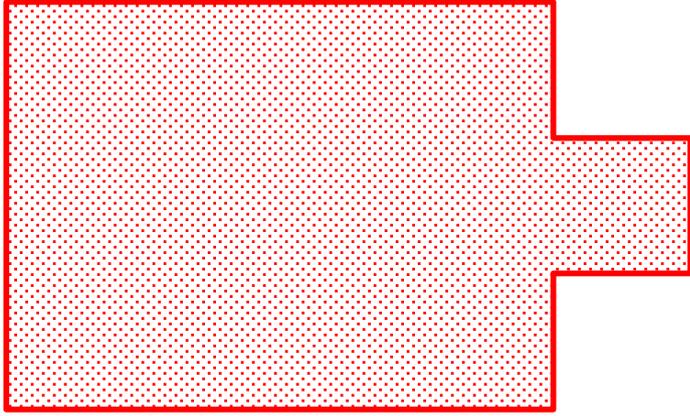
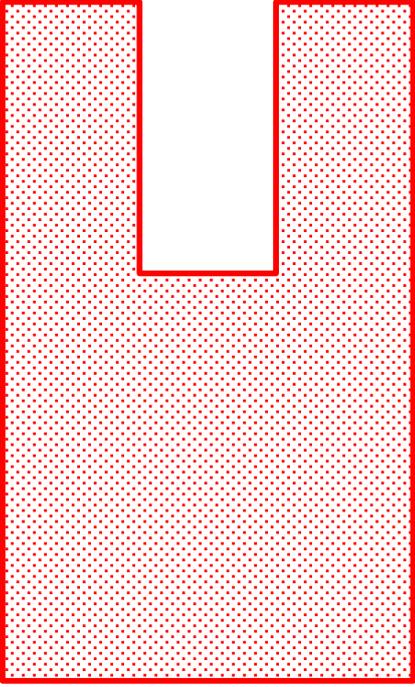


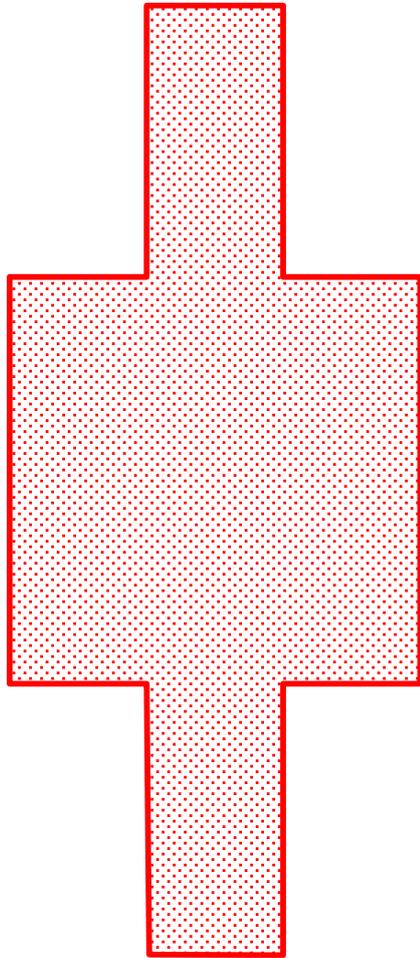
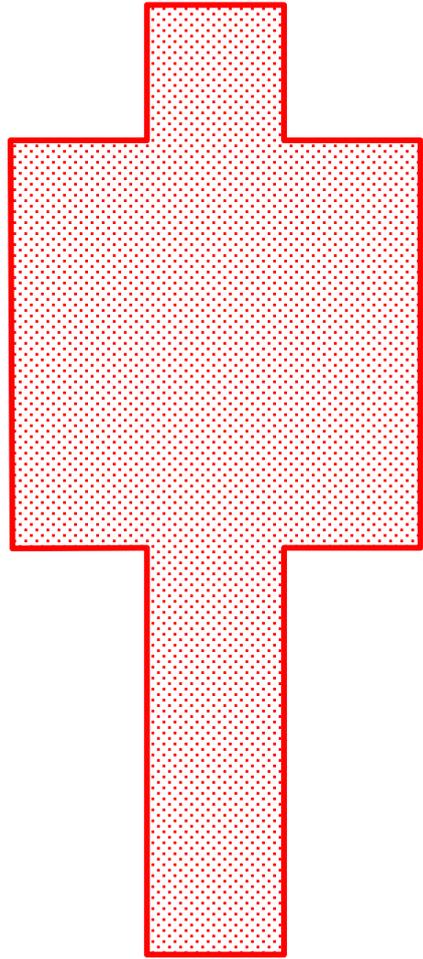
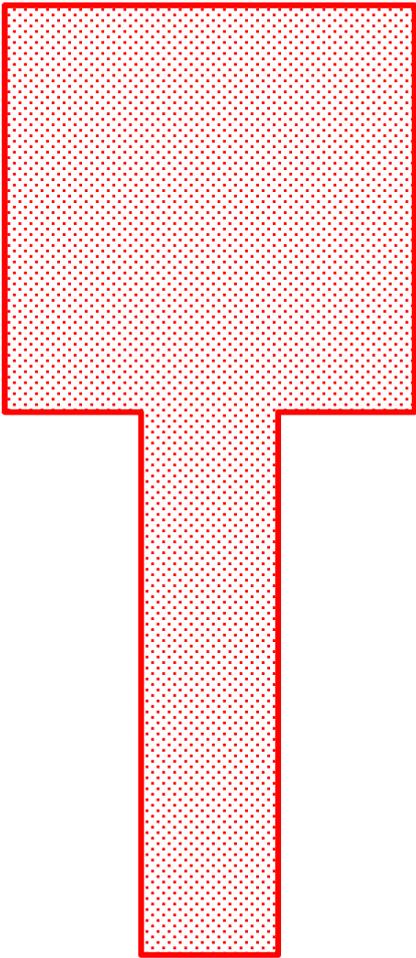
Deux landaus



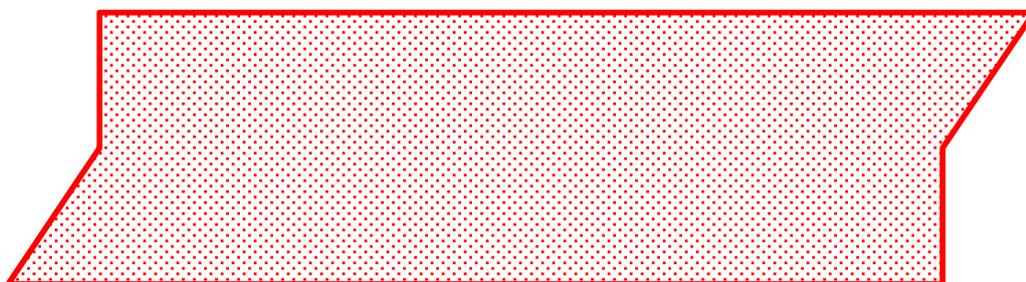
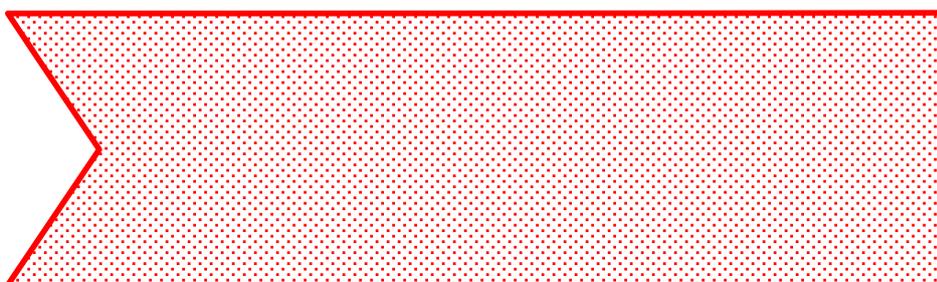
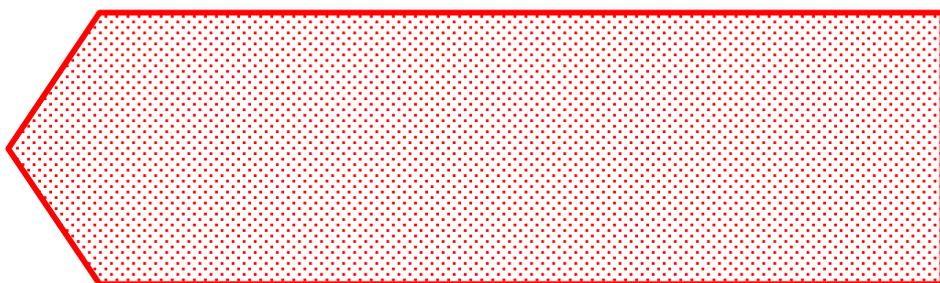
Rectangles et carrés accolés



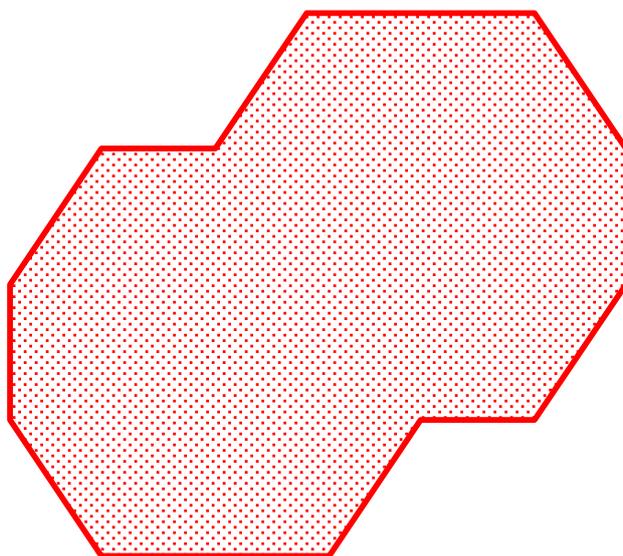


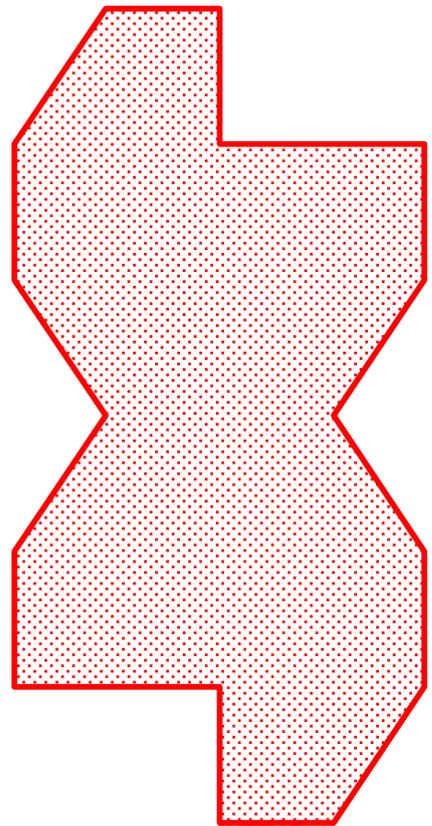
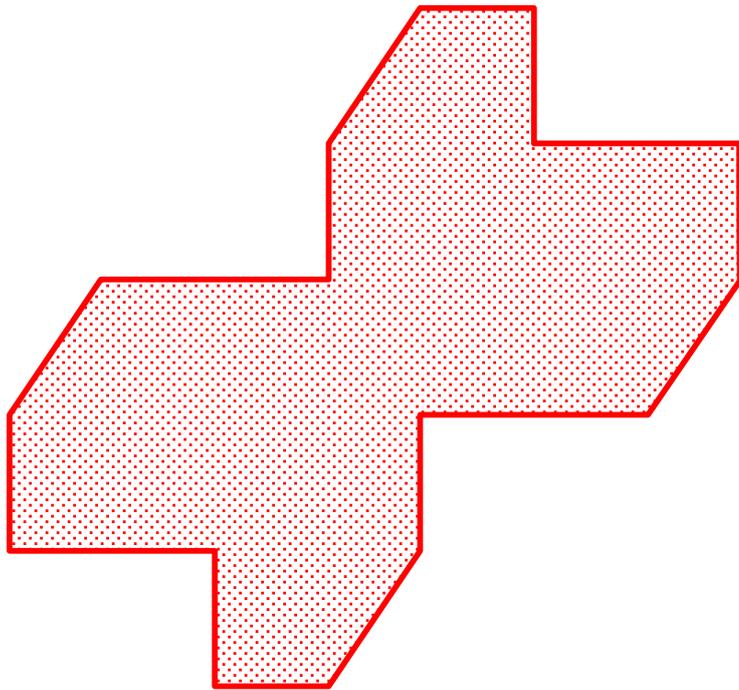


Des assemblages des deux trapèzes rectangles

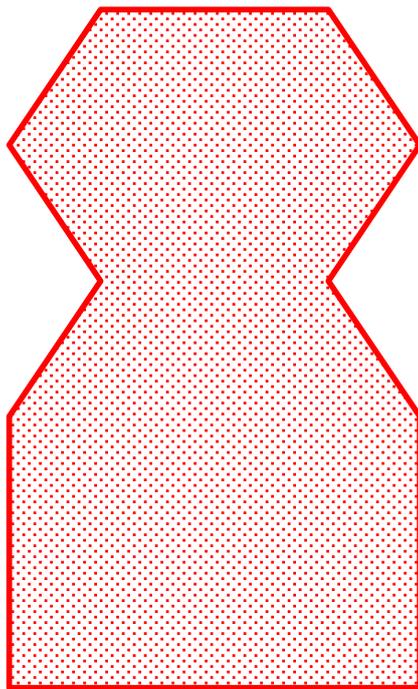
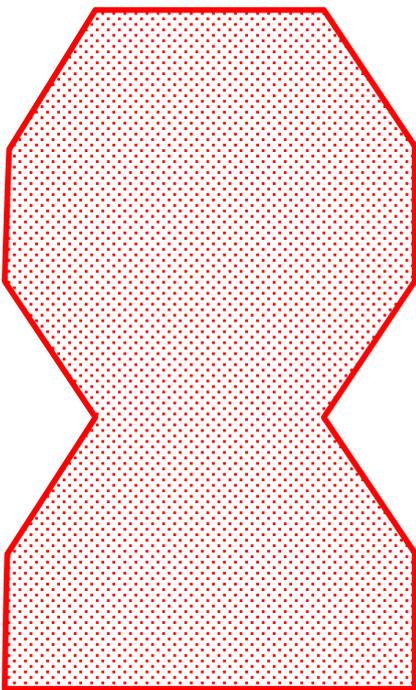


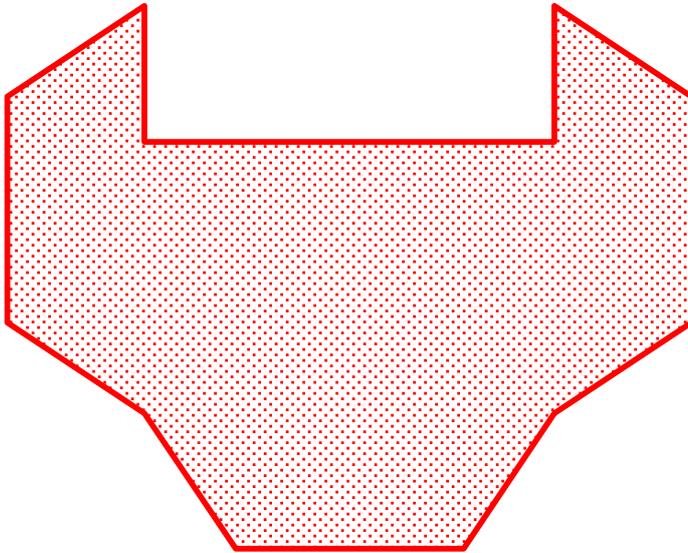
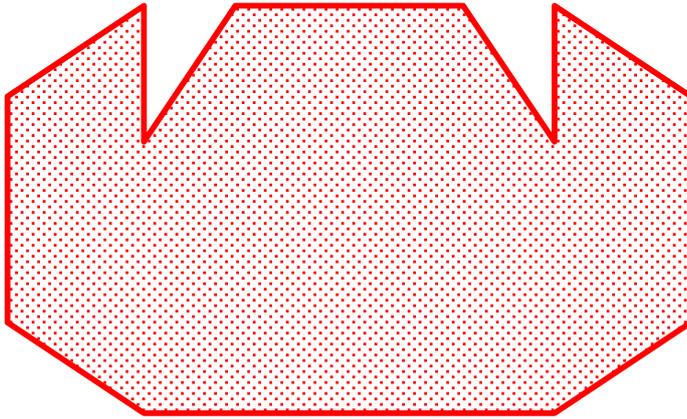
En accolant les deux landaus...



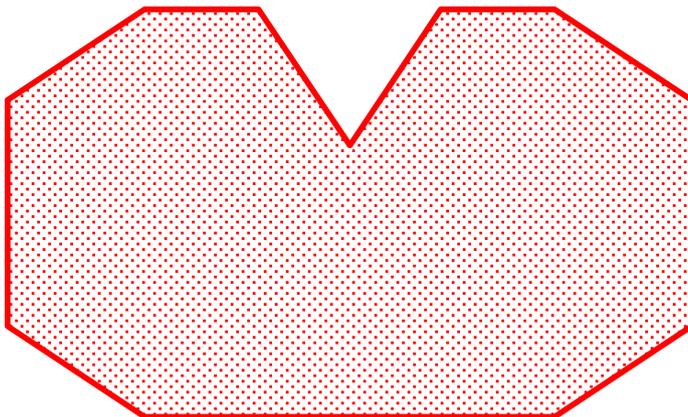


Deux rectangles et trois trapèzes isocèles

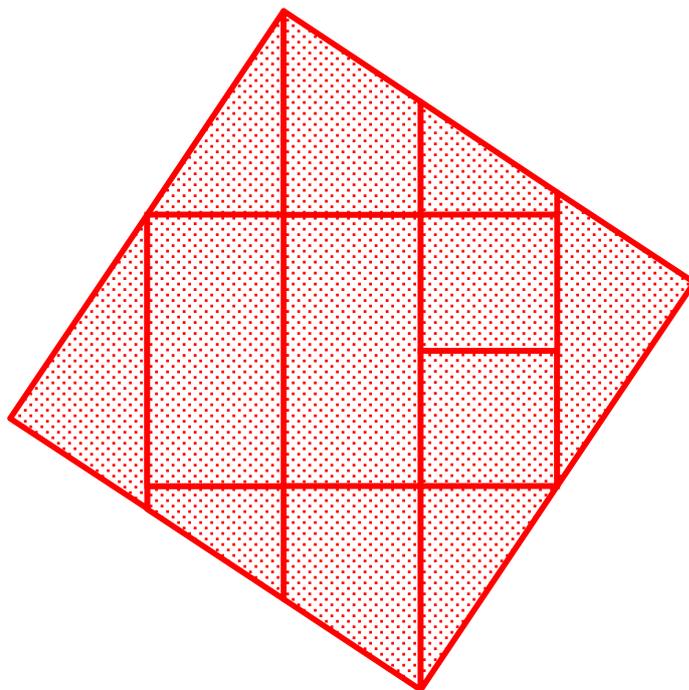
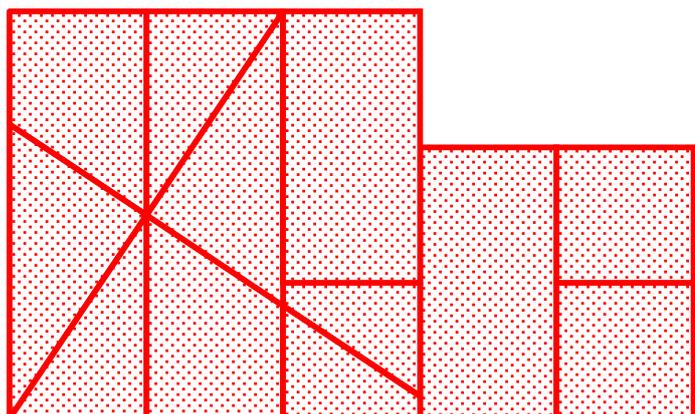




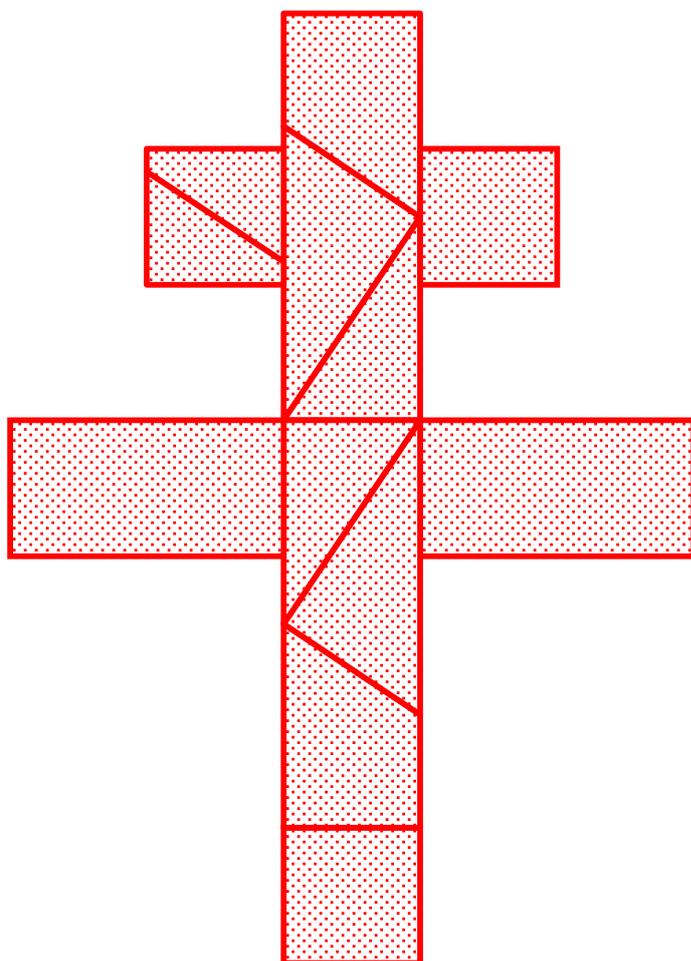
Un des trapèzes isocèles a été partagé en deux trapèzes rectangles.



Des solutions :

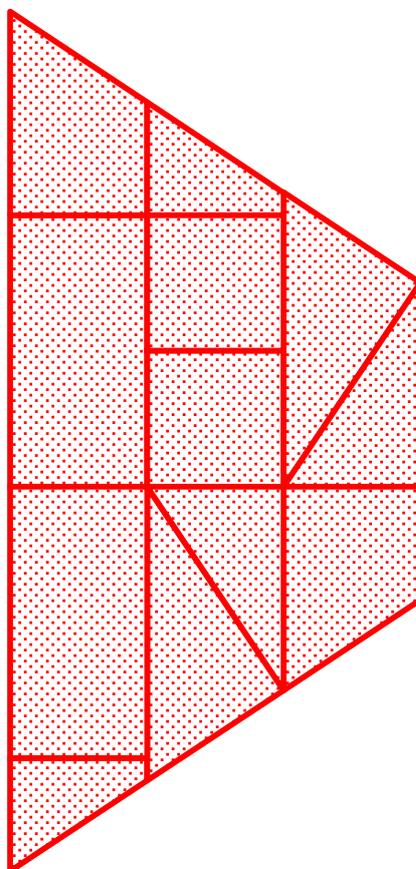
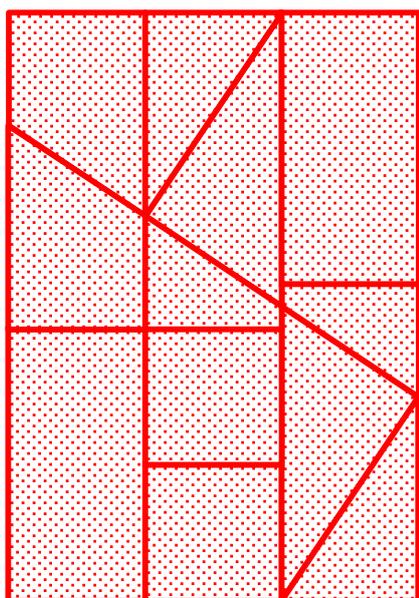
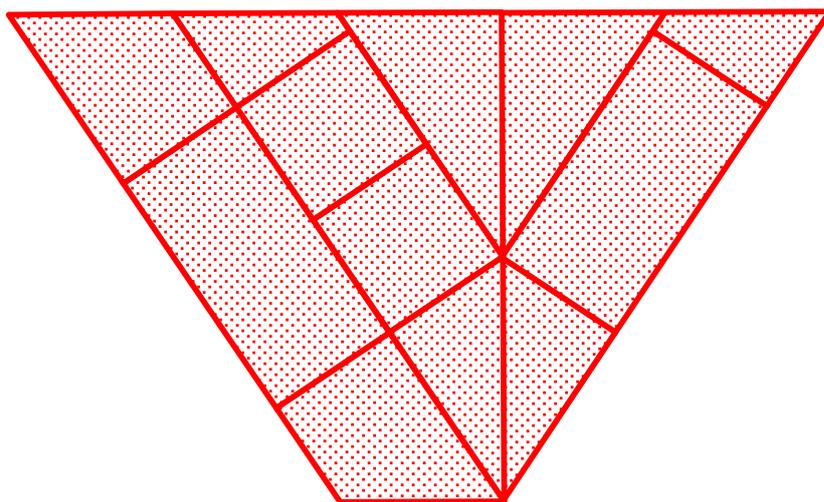
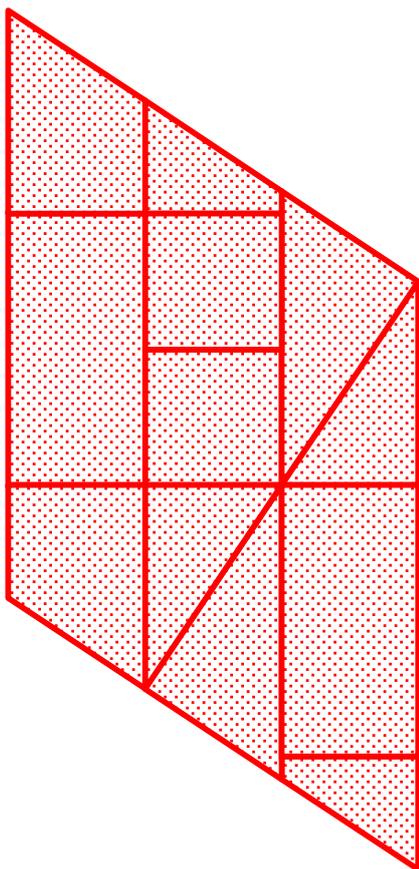


Deux carrés ou un carré.

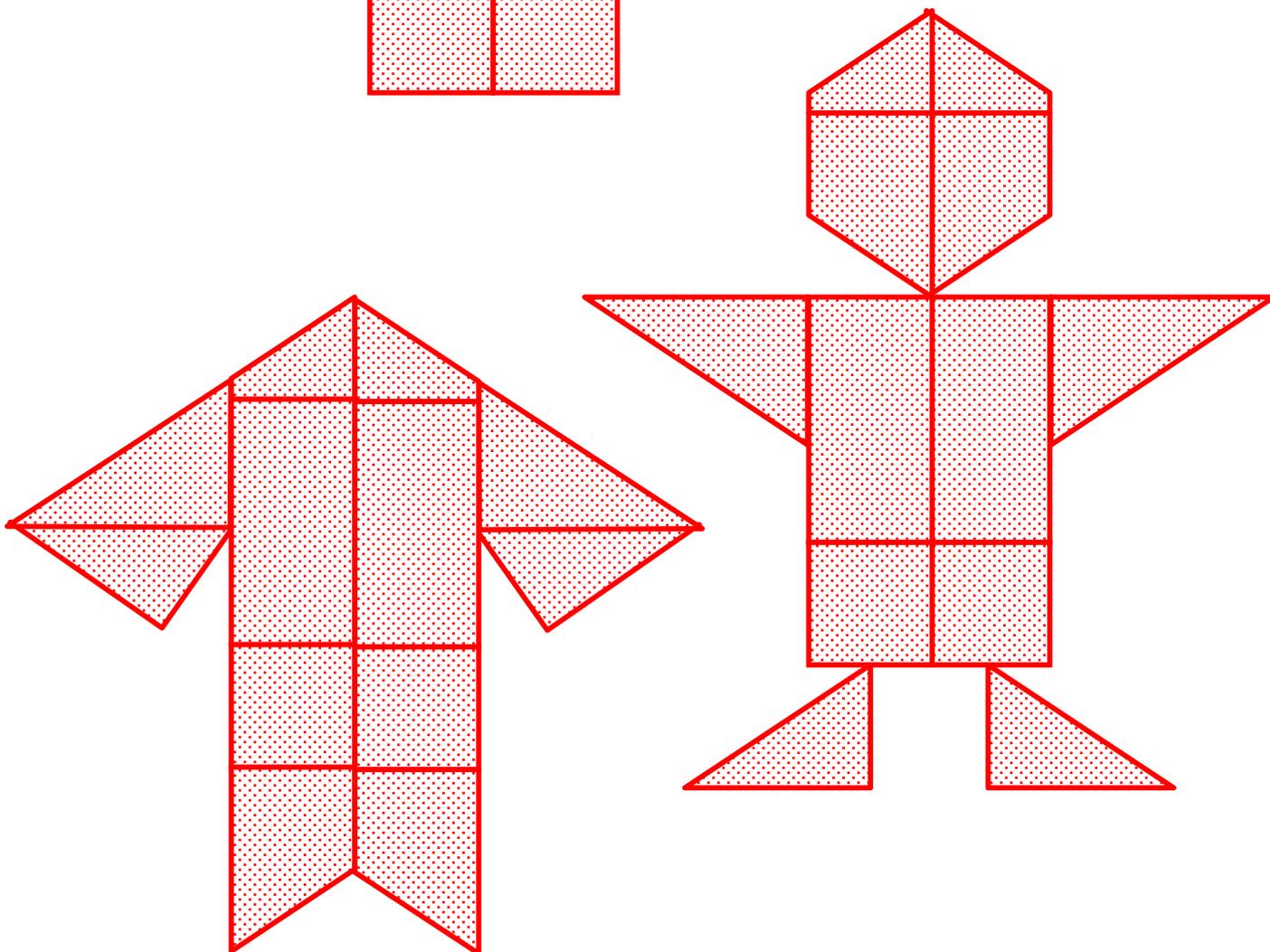
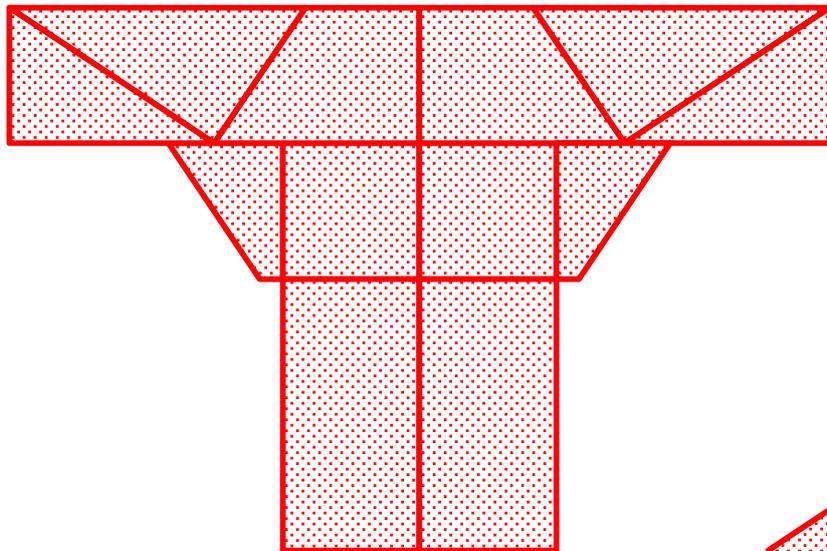


La croix de Lorraine

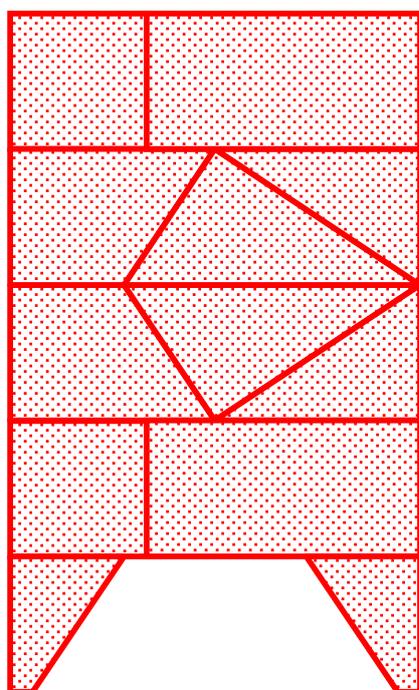
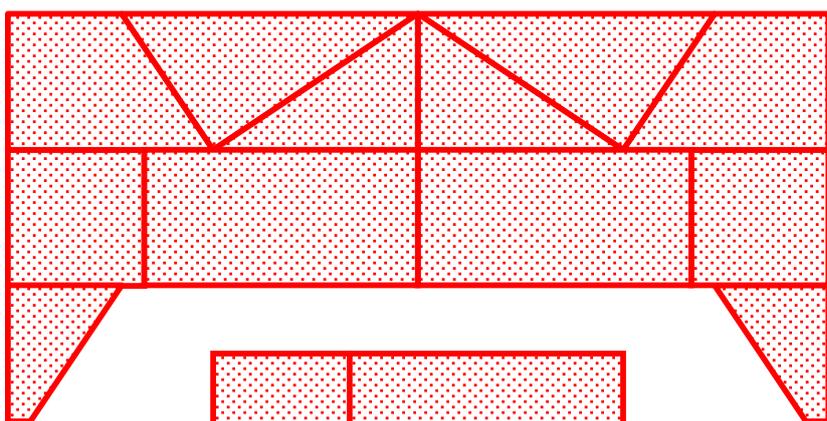
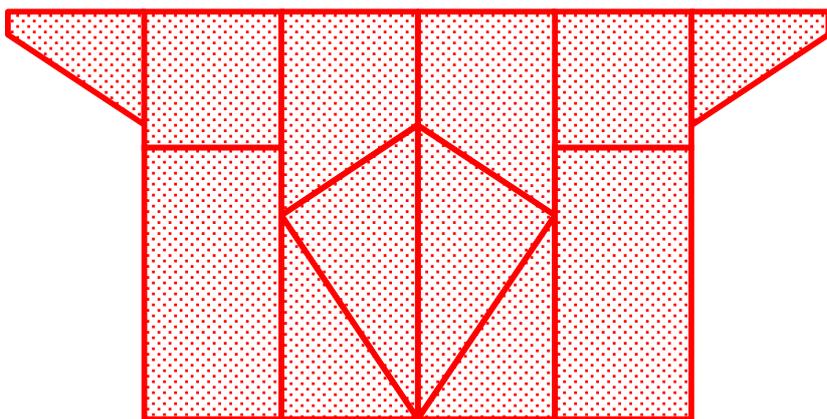
Les quadrilatères :

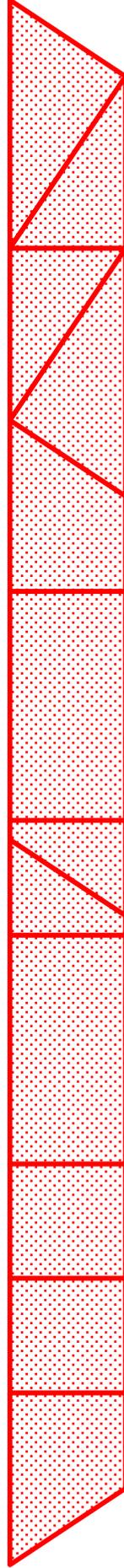
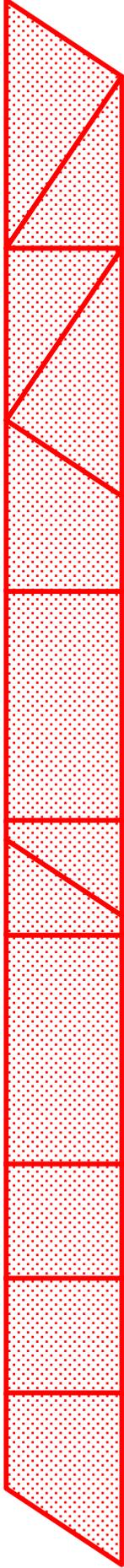
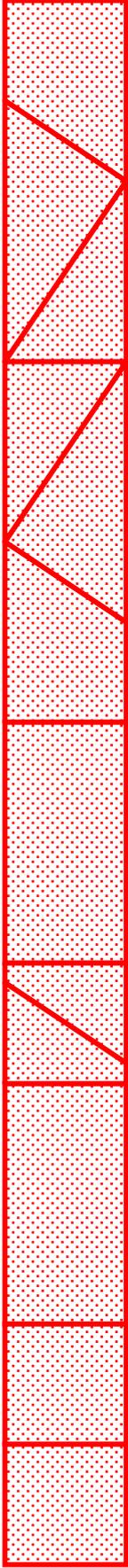


Des assemblages symétriques des pièces :

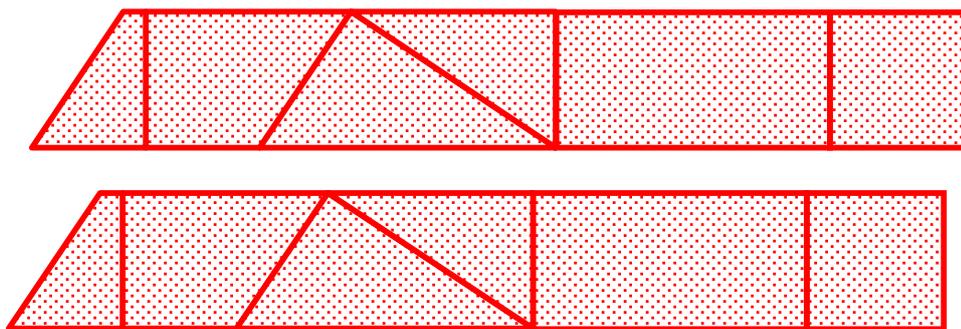


Un peu de mobilier (Deux trapèzes rectangles placés symétriquement)

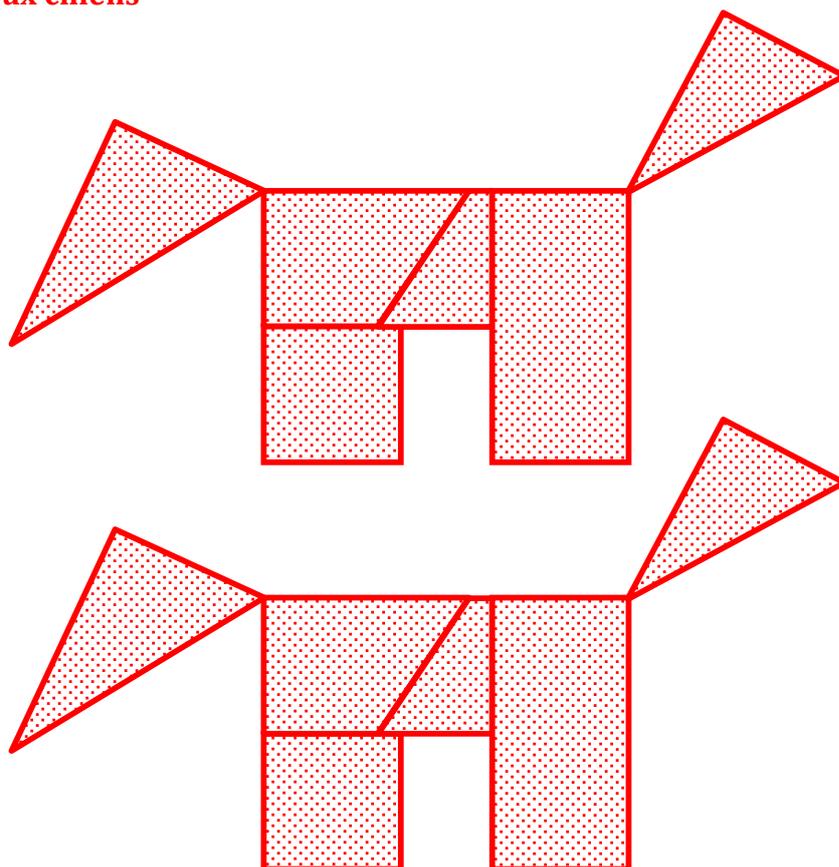




Les deux trapèzes rectangles



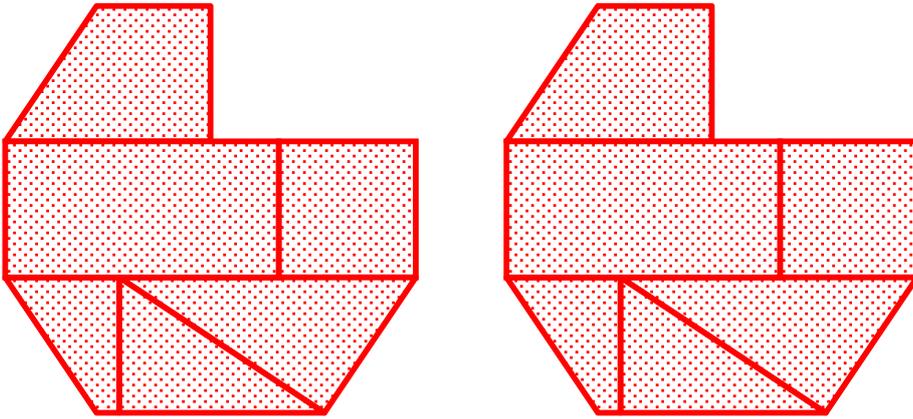
Les deux chiens



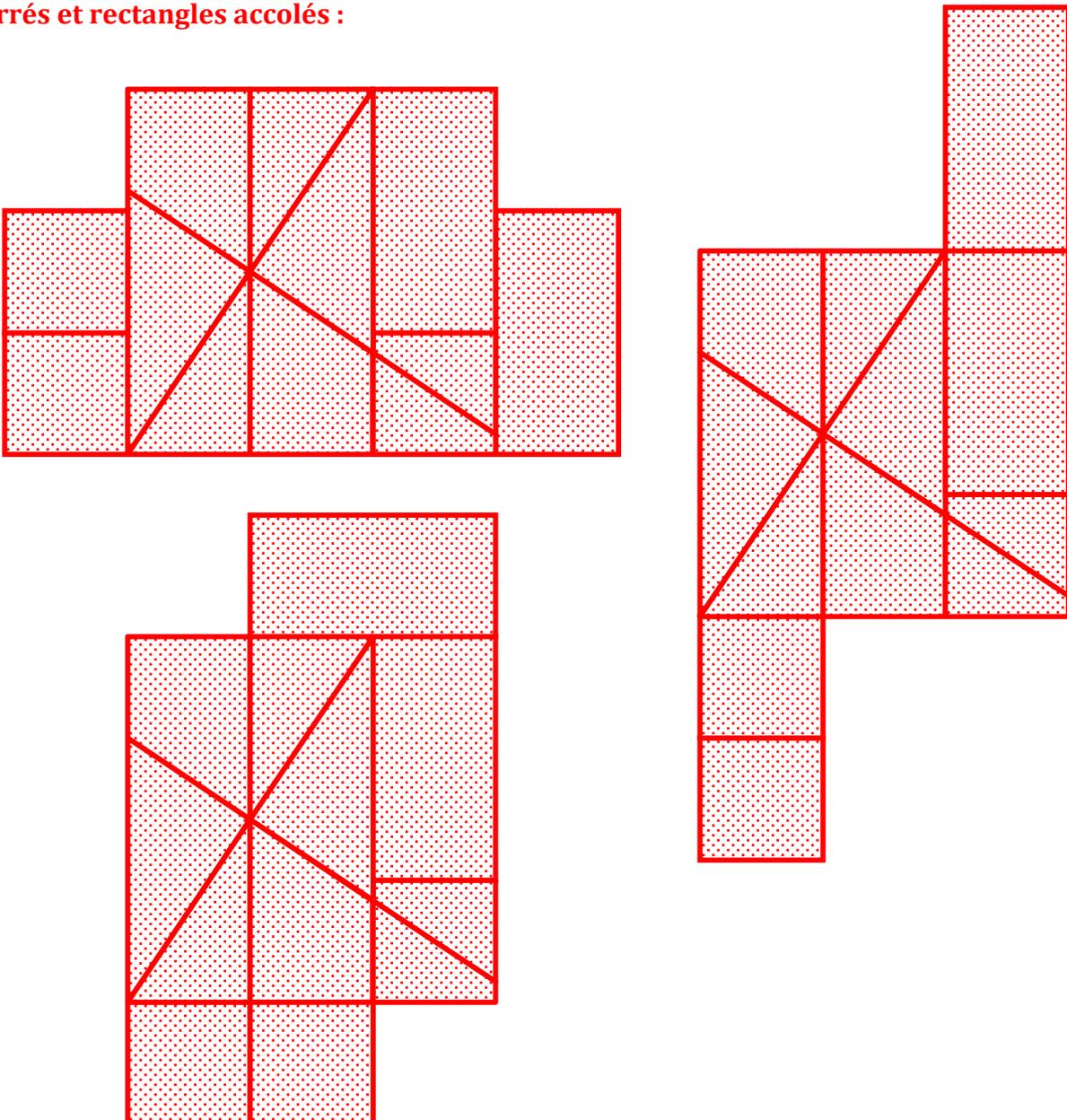
Deux hexagones

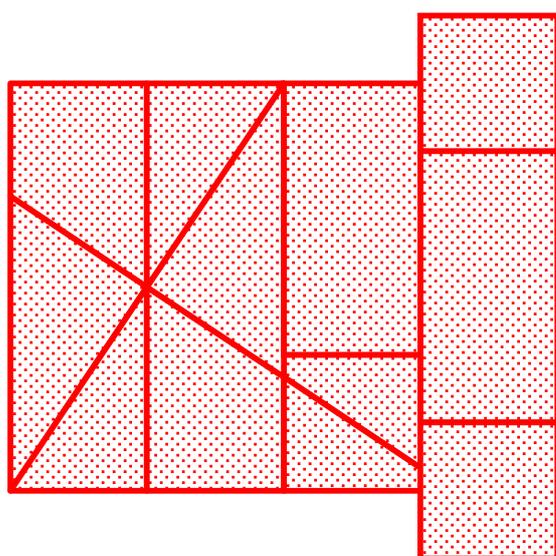
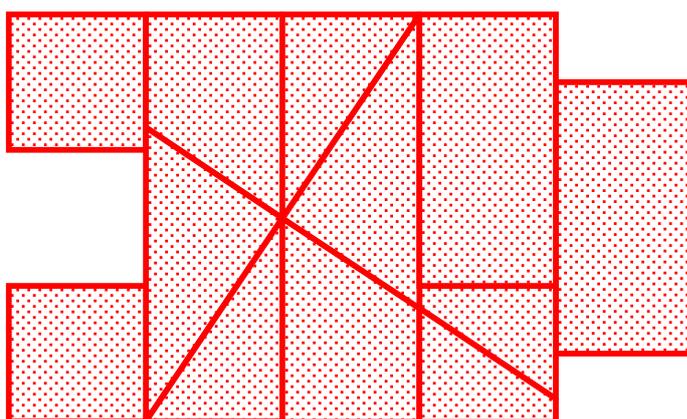
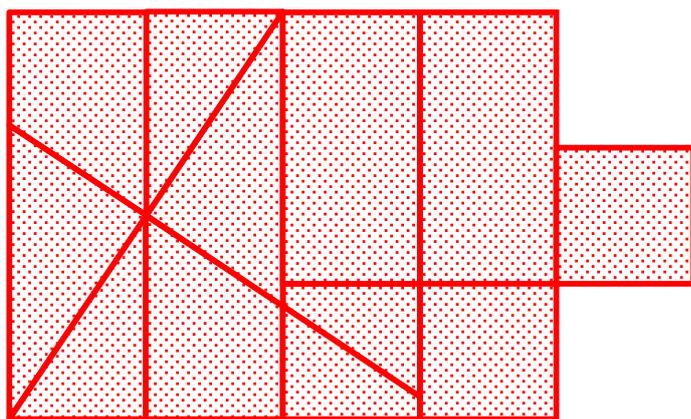
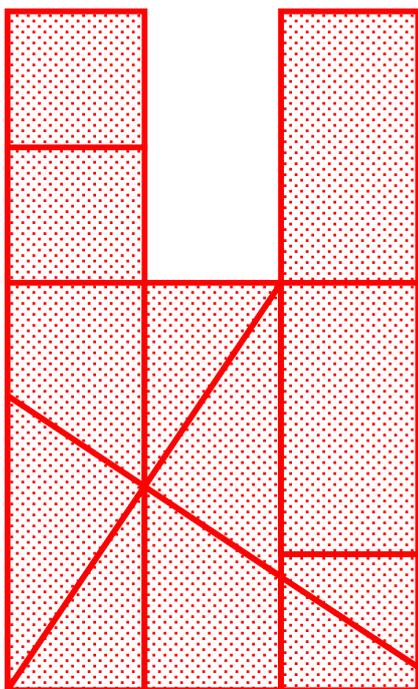


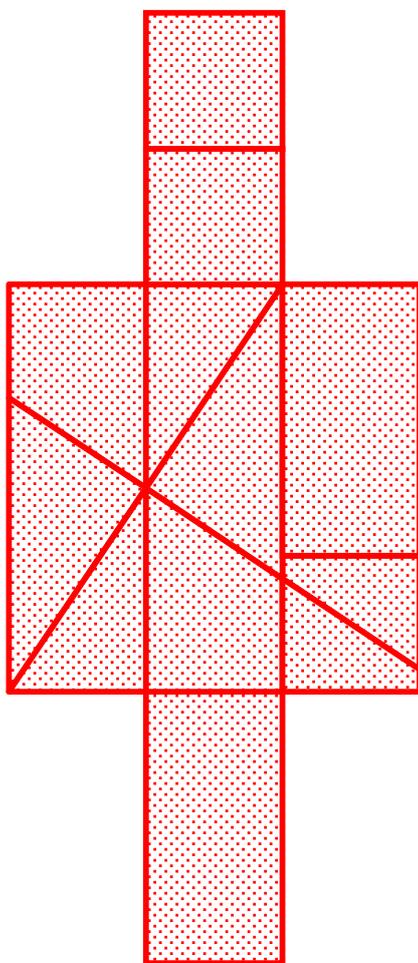
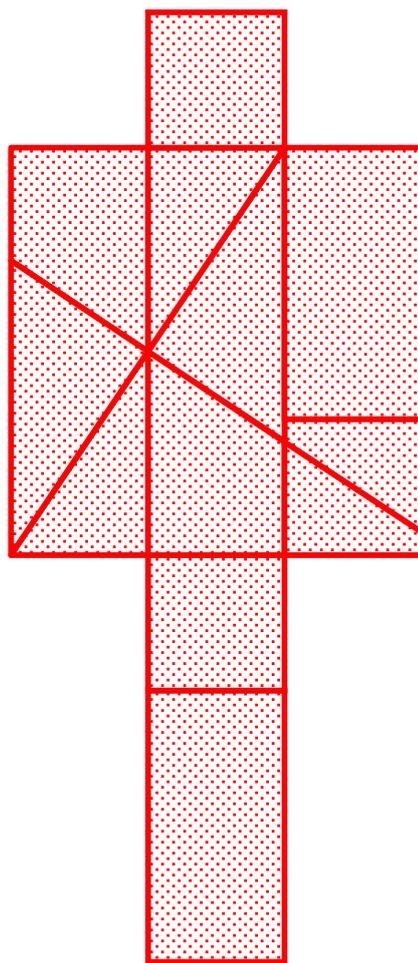
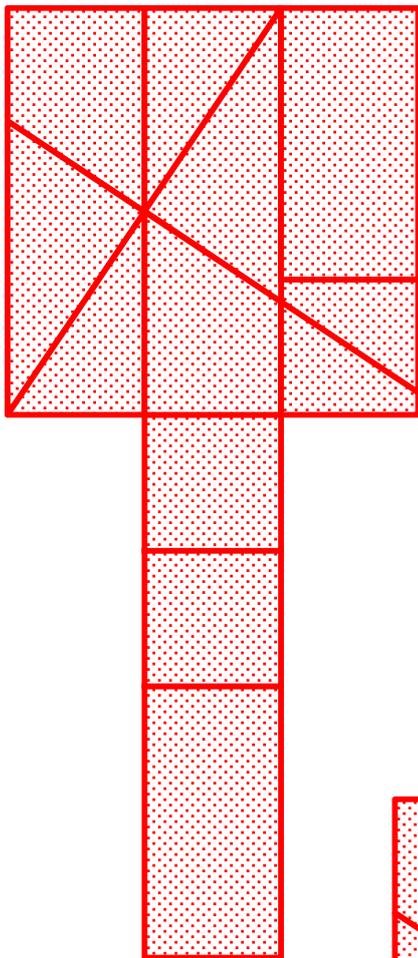
Deux landaus



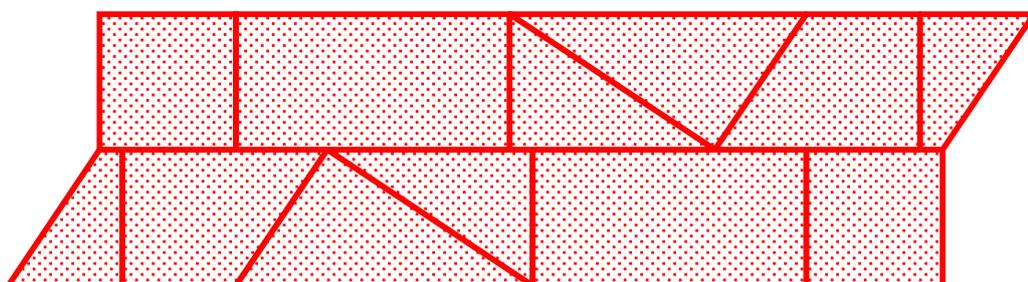
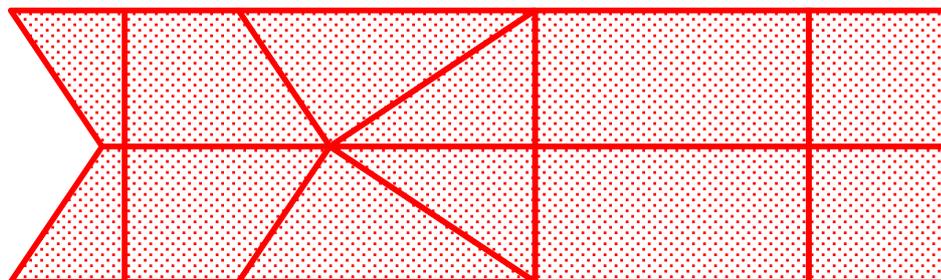
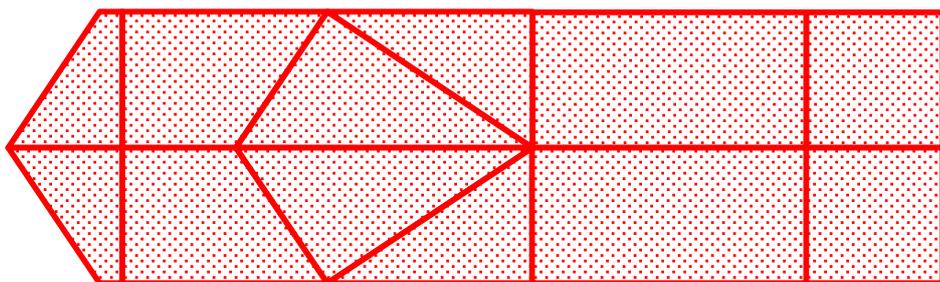
Carrés et rectangles accolés :



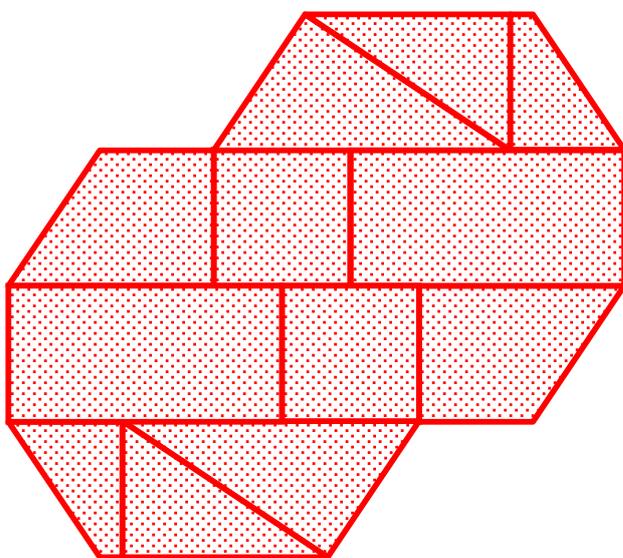


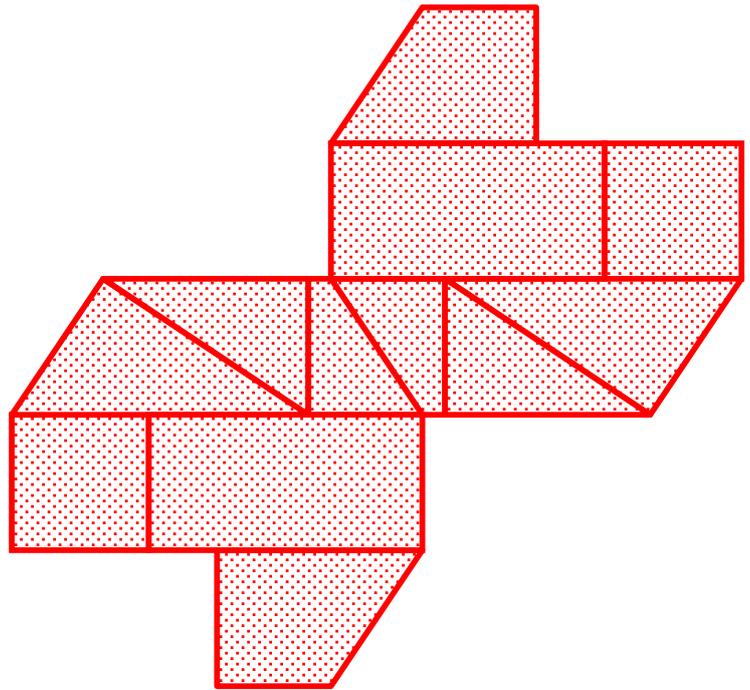
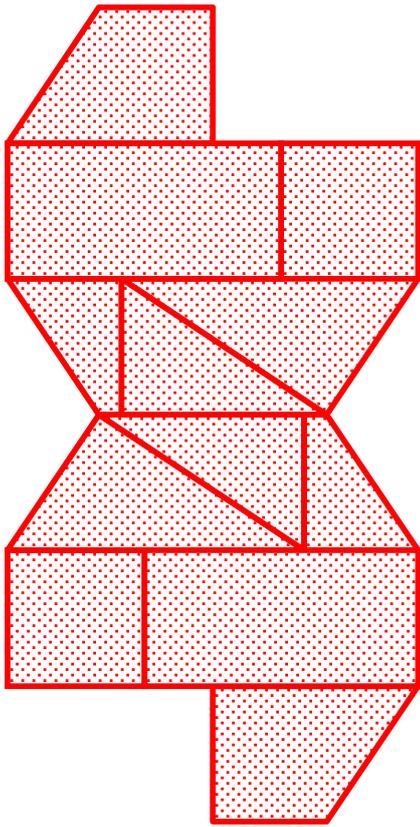


Avec les deux trapèzes rectangles :

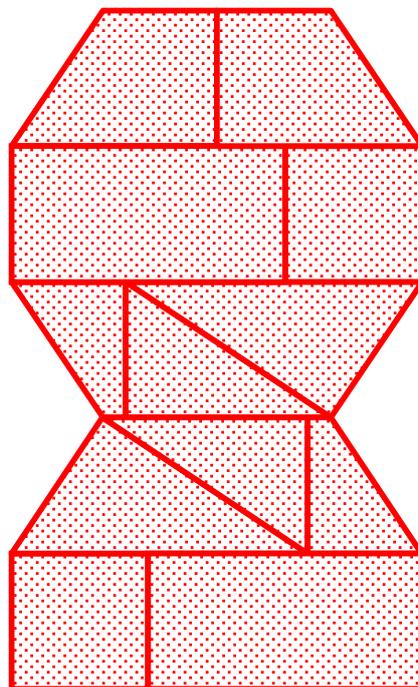
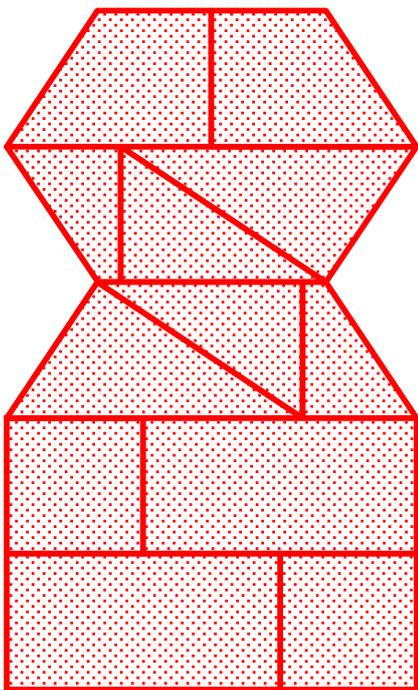


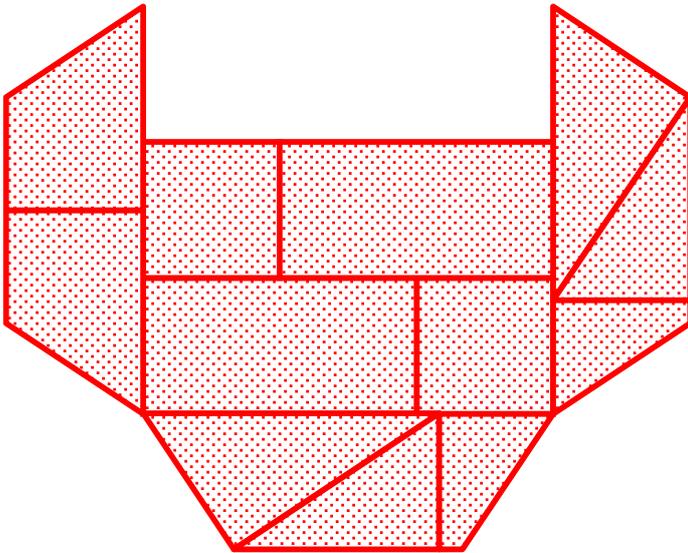
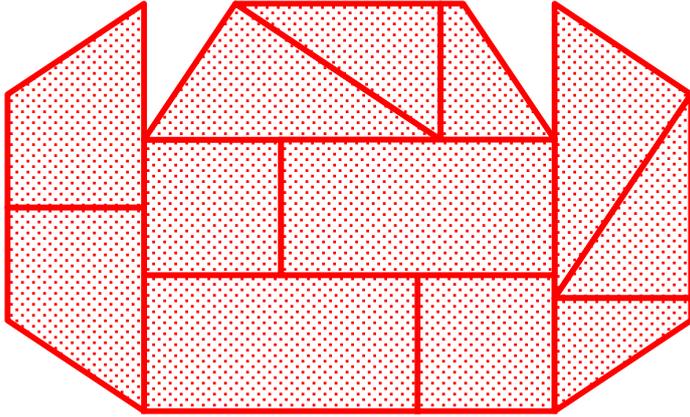
Avec les deux landaus :





Deux rectangles et trois trapèzes isocèles :





Un des trapèzes isocèles a été découpé en deux trapèzes rectangles.

