

# **Modélisation des savoirs musicaux relevant de l'oralité**

*Marc Chemillier  
Séminaire EHESS, 13 janvier 2020*

## **Ethnomathématique**

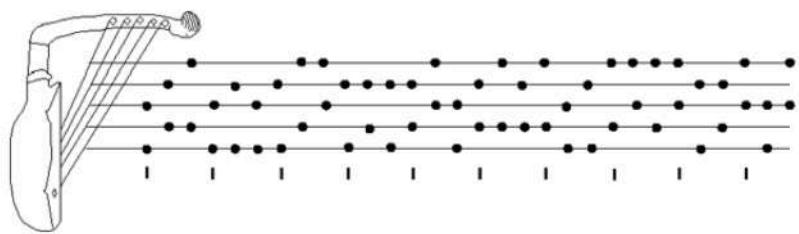
Harpes nzakara de Centrafrique

Dessins sur le sable du Vanuatu

*Le théorème de Pythagore:  
hommage à Pierre Rosenstiehl (1933-2020)*







Mbiate

(3)



Maliba

(650) (W)



Alingawi

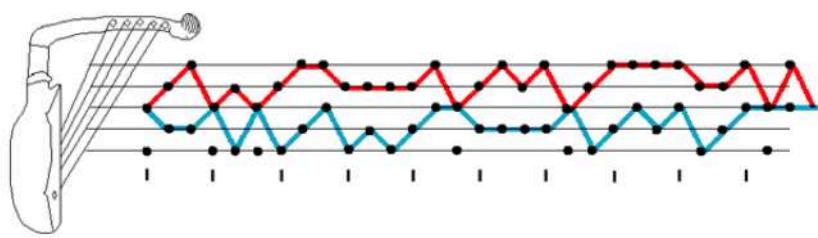
(E)

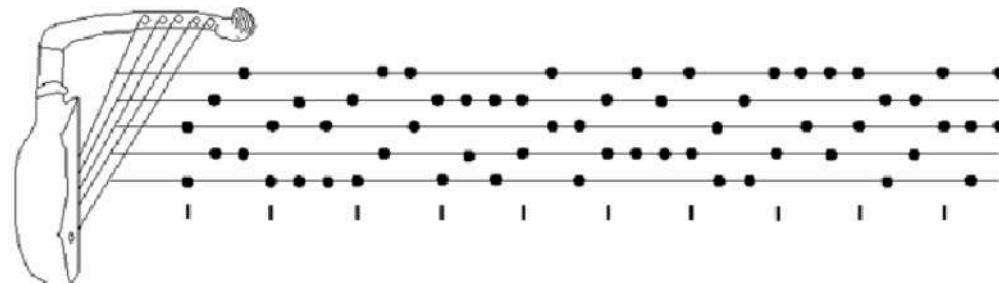
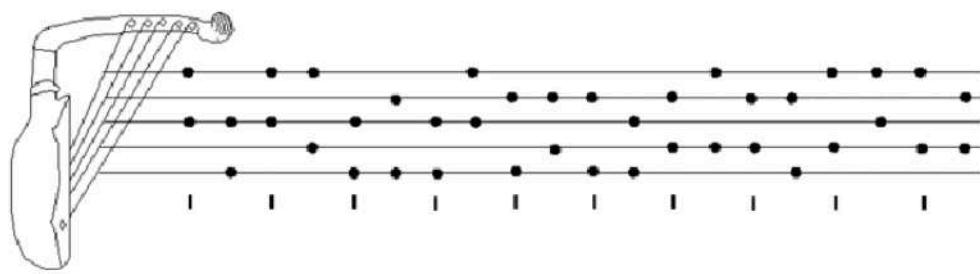
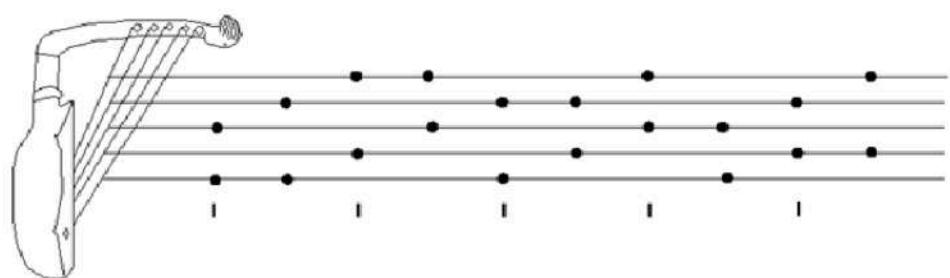


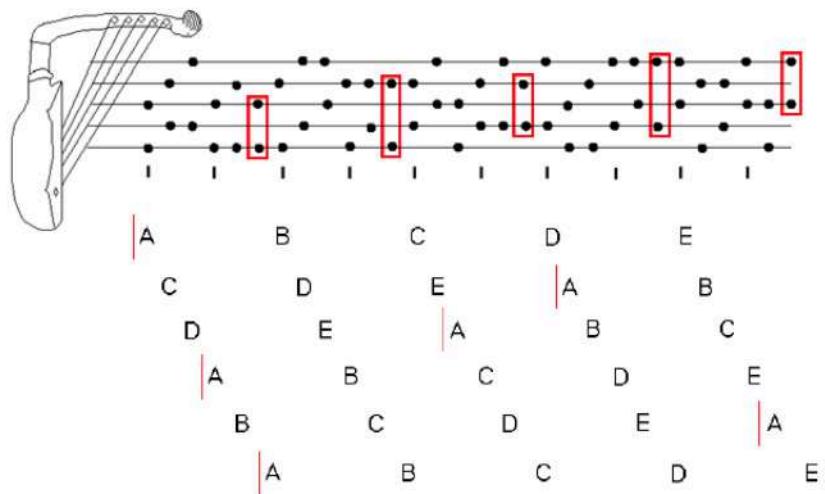
Mada

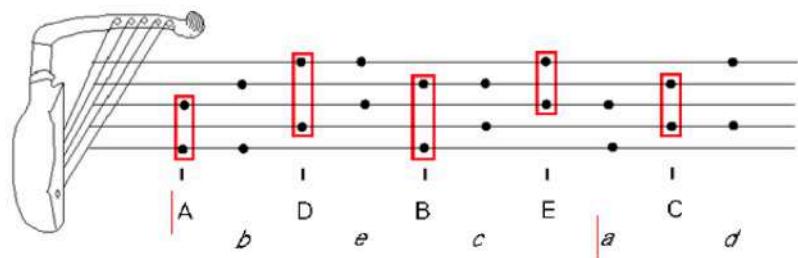
(650) (W)











A a D d B b E e C c

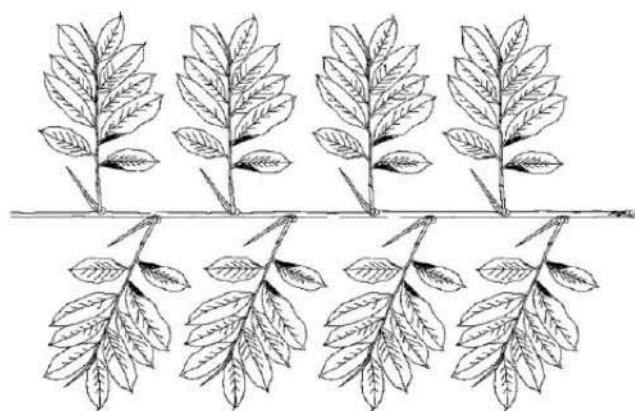
A d D b B e E c C a

A b D e B c E a C d

A e D c B a E d C b

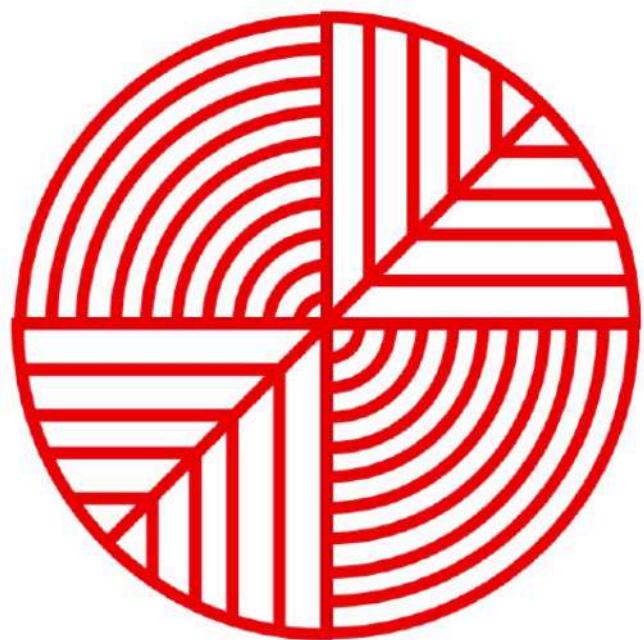
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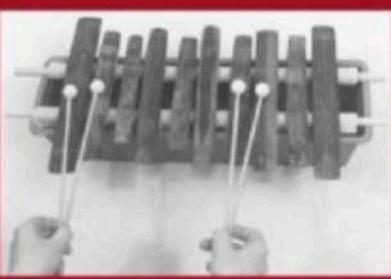








Klaus-Peter Brenner



Die kombinatorisch strukturierten Harfen- und  
Xylophonpattern der Nzakara  
(Zentralafrikanische Republik) als klingende Geometrie

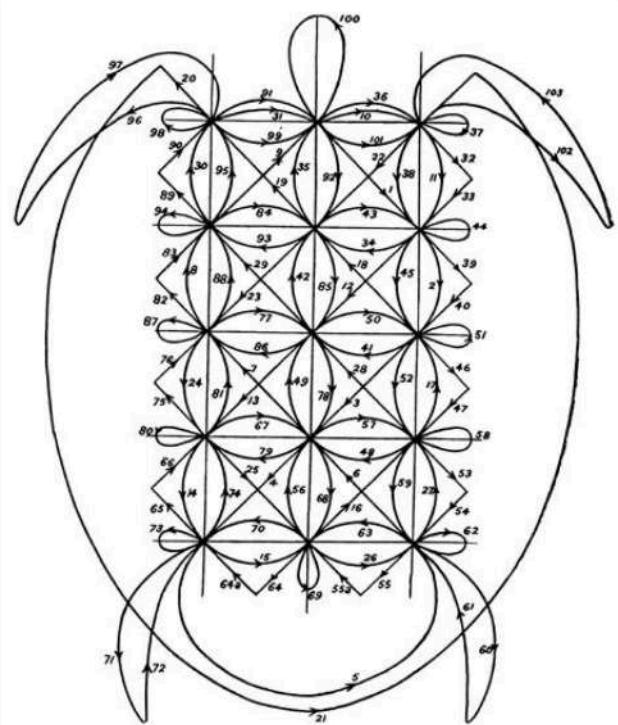
Eine Alternative zu Marc Cheneilliers Kanonhypothese

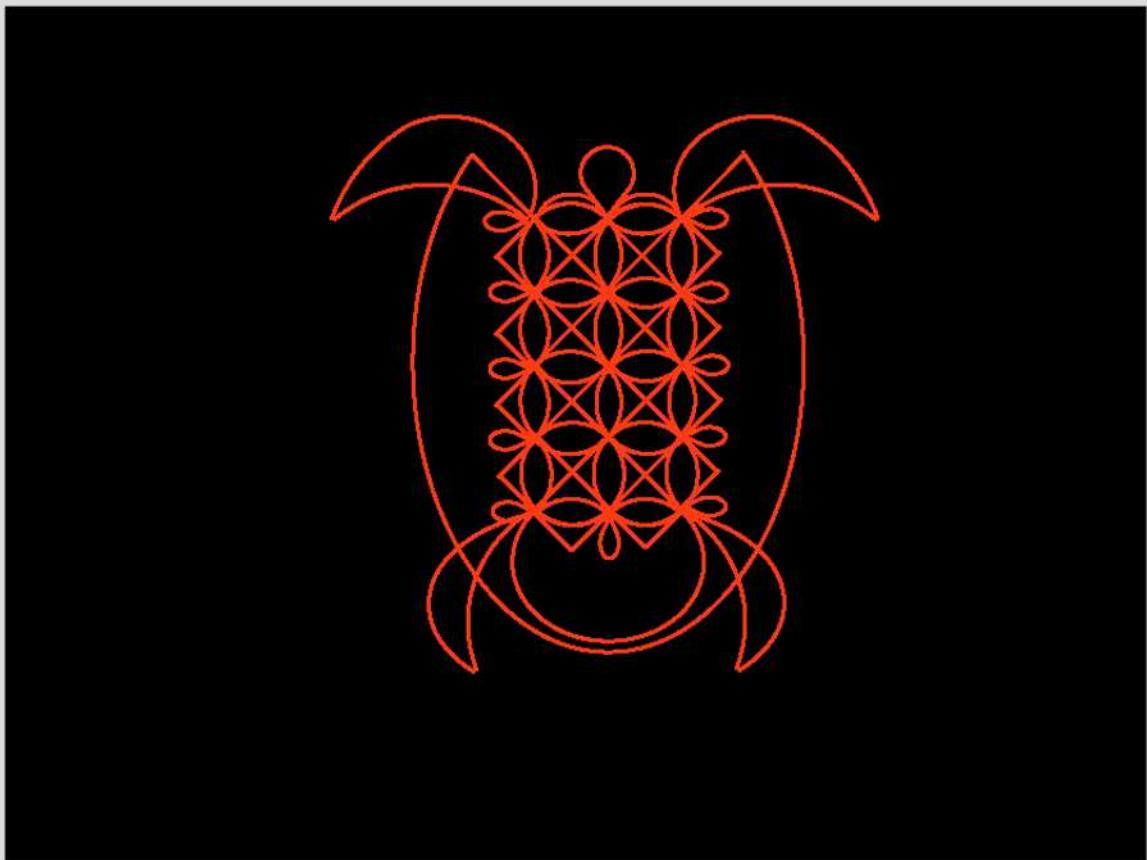
HOLOS

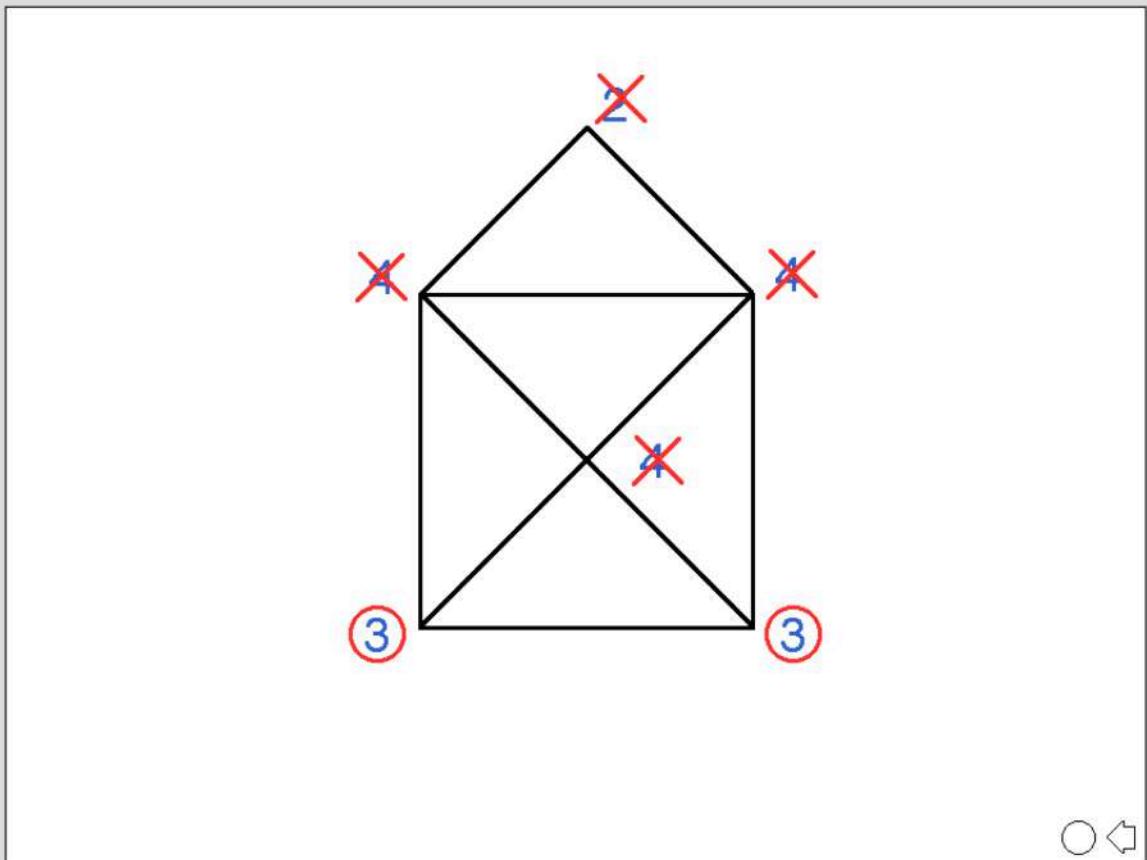


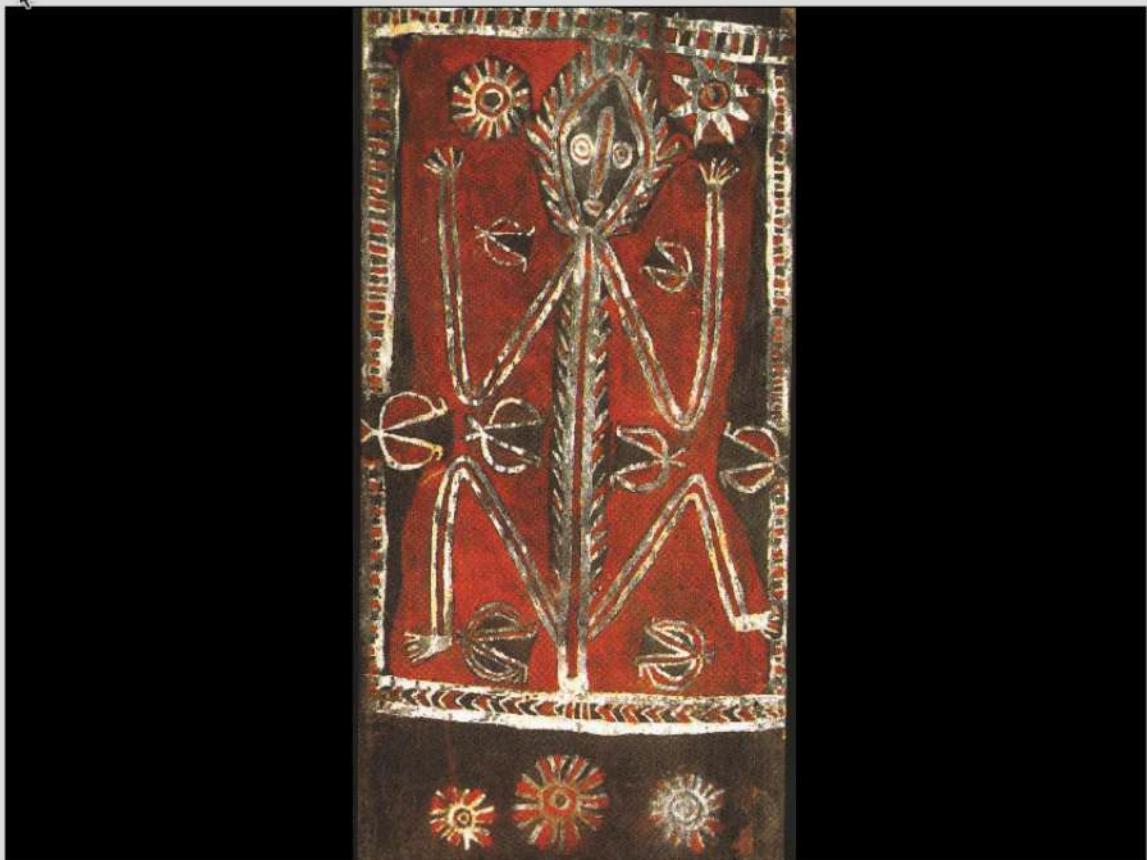


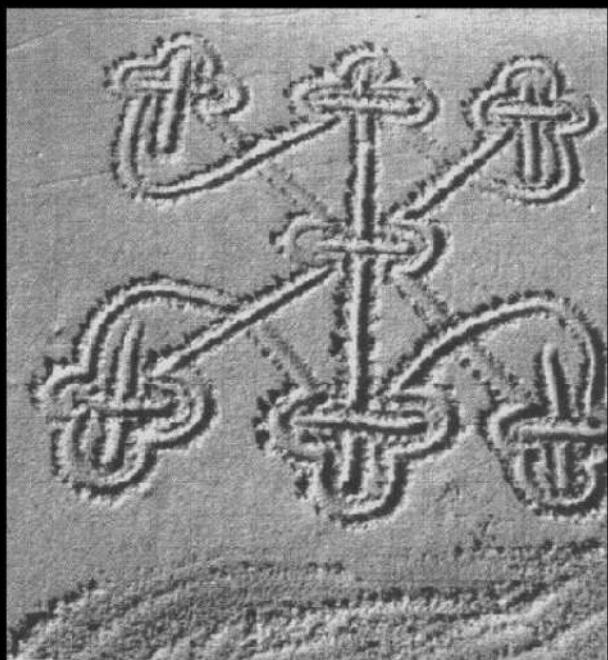








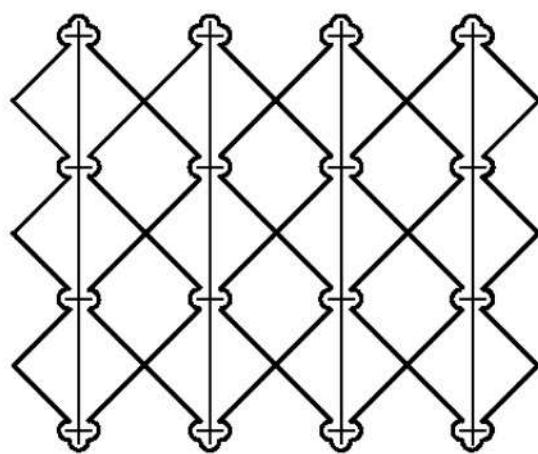




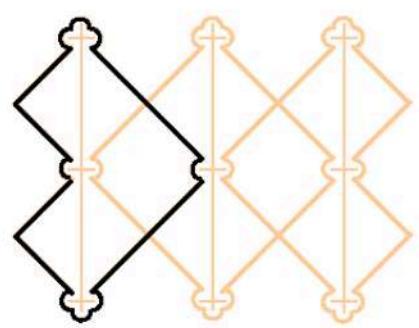
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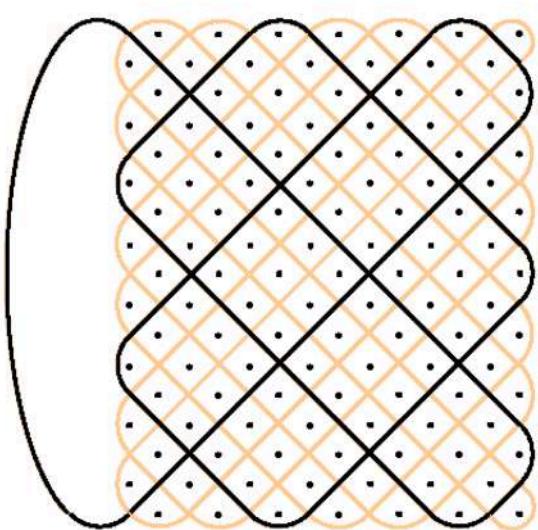


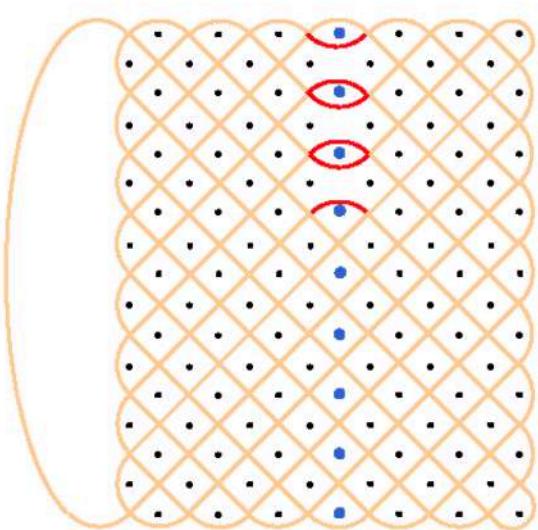
**4 × 4**

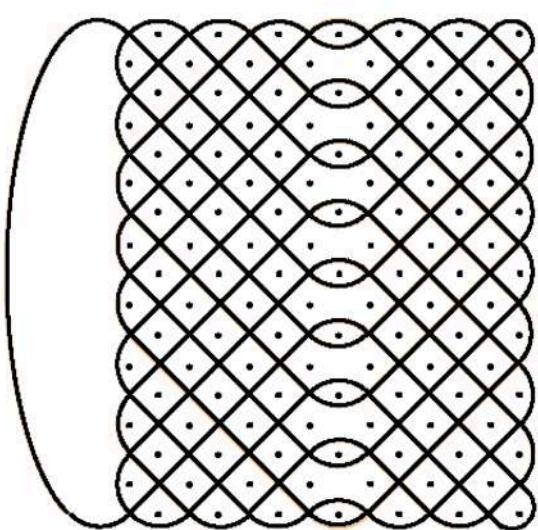


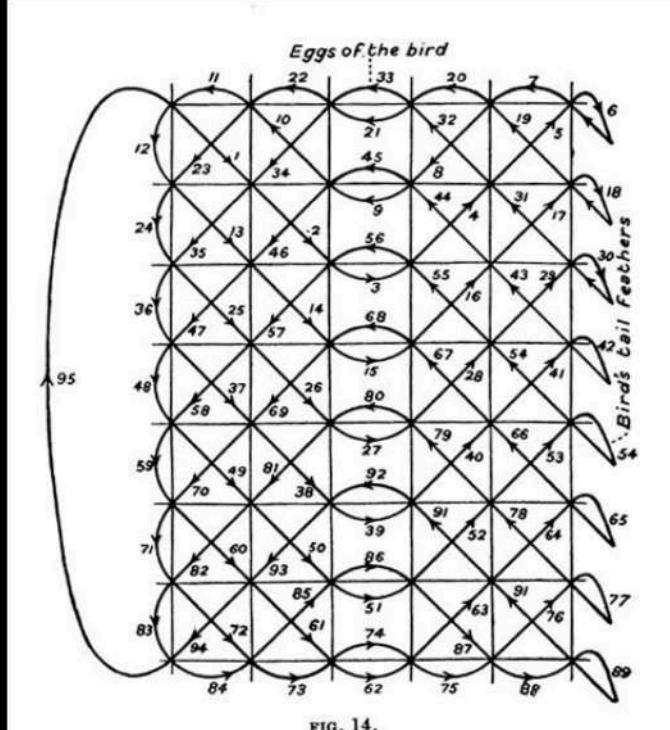
**3 x 3**

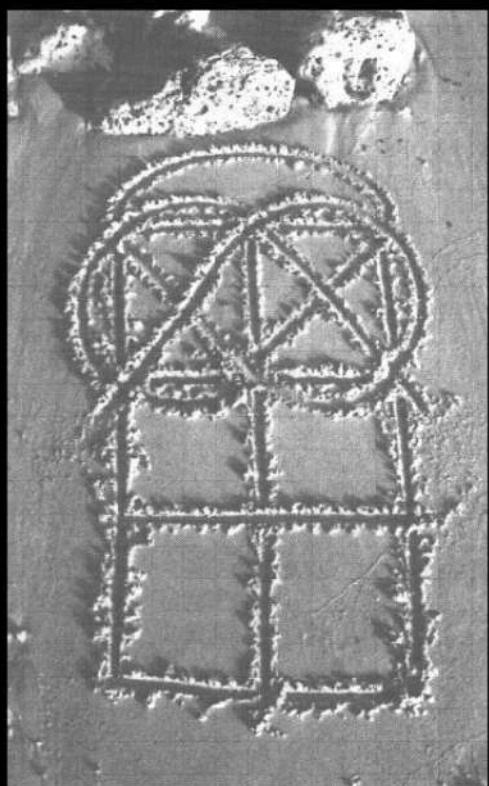


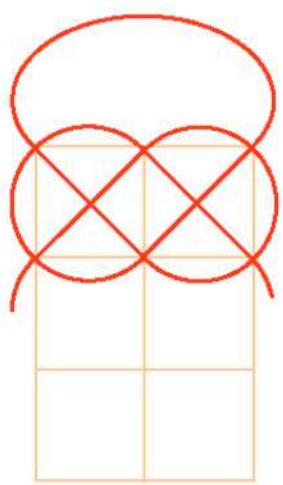


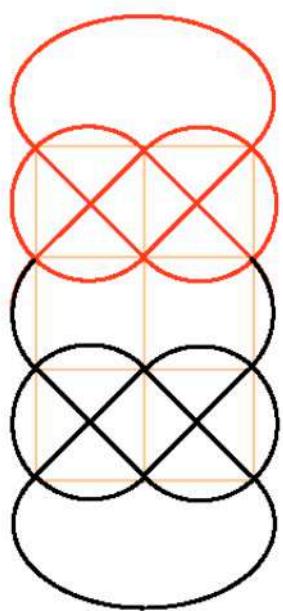


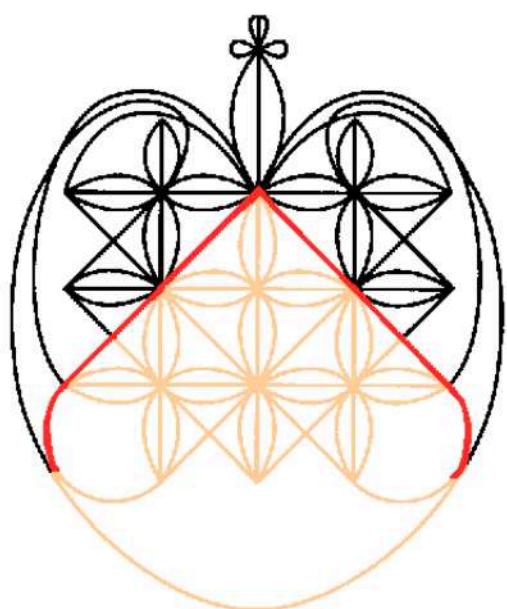


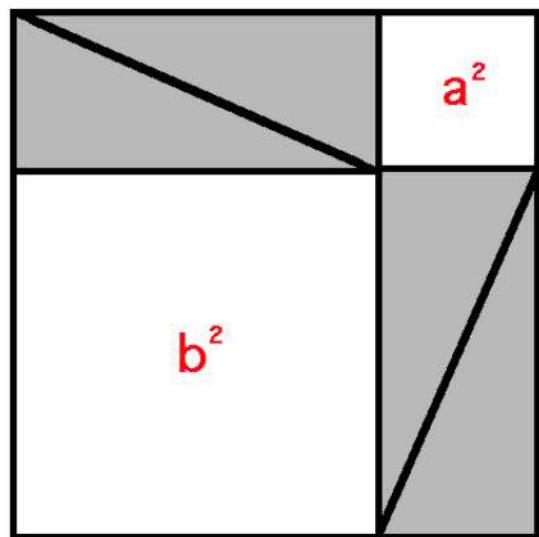






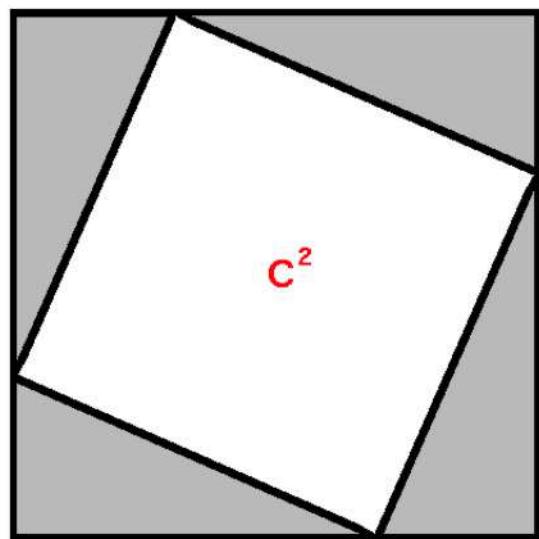






$$a^2 + b^2 = c^2$$

◻ ◻



$$a^2 + b^2 = c^2$$

◻ ◻

**Rosenstiehl Pierre** 

16 février 2020 19:01

À : Marc Chemillier

l'angle naturel

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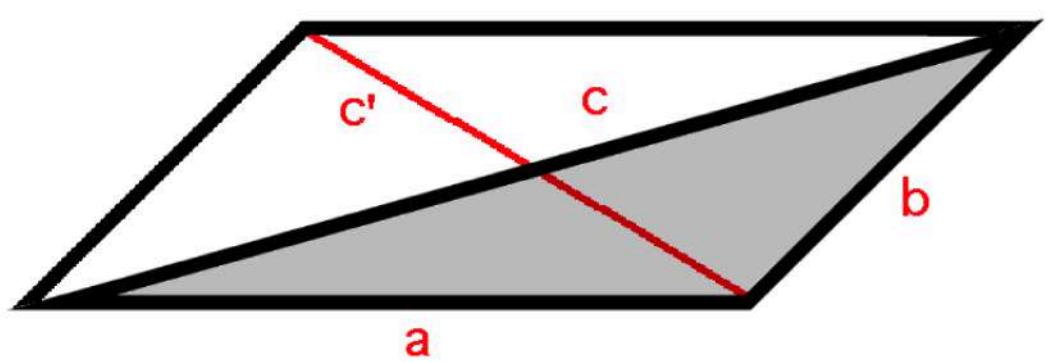
Cher Marc,

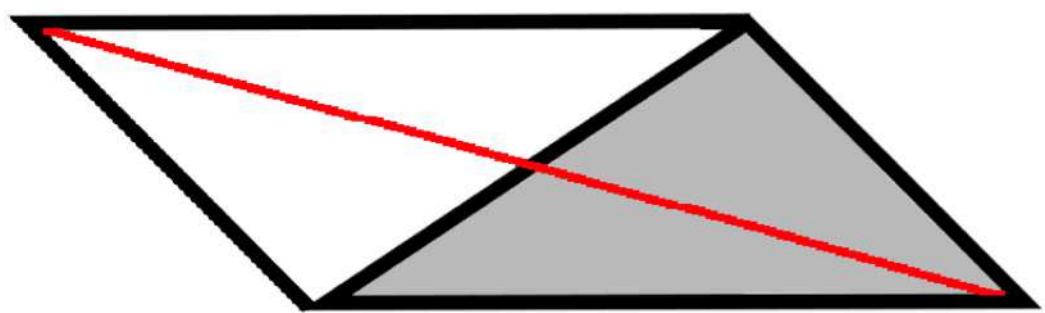
Pourquoi pas la réciproque de Pythagore avec les tangrams seulement !

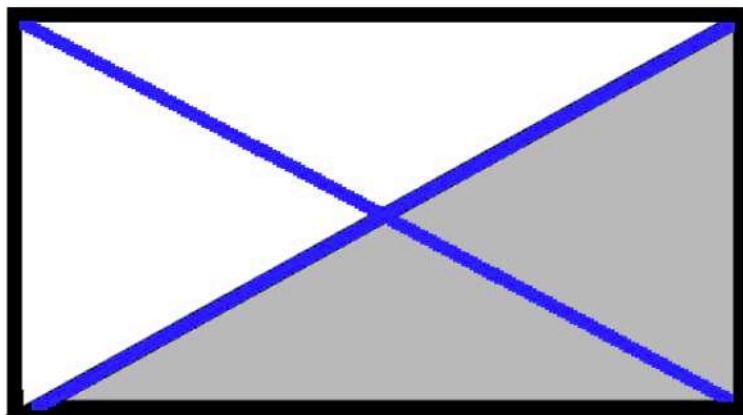
Amitiés,  
Pierre



Réiproque par tangram  
seulement.docx







si  $C = C'$  alors c'est un rectangle (principe des étagères IKEA)

Formule magique valable pour TOUS les parallélogrammes :

$$C^2 + C'^2 = (a^2 + b^2) + (a^2 + b^2)$$

que se passe-t-il si  $C^2 = a^2 + b^2$  ?

alors  $C = C'$  donc le triangle est rectangle = réciproque de Pythagore

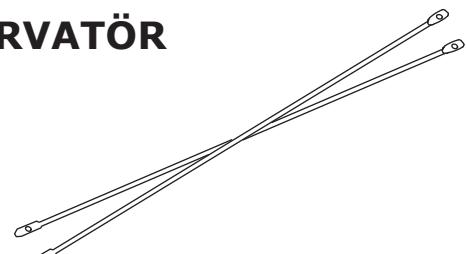
**3**

**OBSERVATÖR**



108458

4x



1x

