



Descobrir as Figuras que Faltam:
Série de Exercícios Inspirados em Desenhos Tradicionais dos
Quiocos do Nordeste de Angola e dos Tamil do Sul da Índia¹

Paulus Gerdes

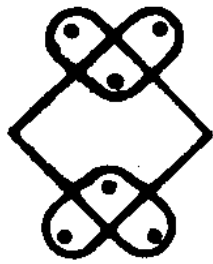
O leitor certamente conhece exercícios aritméticos do tipo: “Procure os números que faltam”. Por exemplo:

- a) 2 4 6 6 8 10 10 12 14
- b) -1 1 5 11
- c) 2 .. 8 16 .. 64 ..

Como variante sobre este tema, apresentaremos neste artigo uma série de exercícios geométricos, em que se pede para procurar as figuras que faltam. Em todos os casos trata-se de uma única linha fechada que se cruza muitas vezes consigo mesma e que abraça todos os pontos duma rede de pontos. Experimente.

¹ Digitalizado por Edson Pereira Barbosa e Sílvio César Otero Garcia.

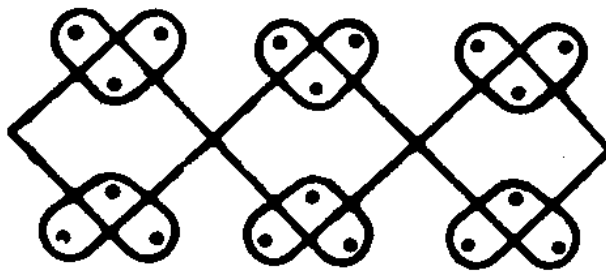
01.



A

?

B

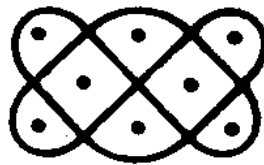


C

?

D

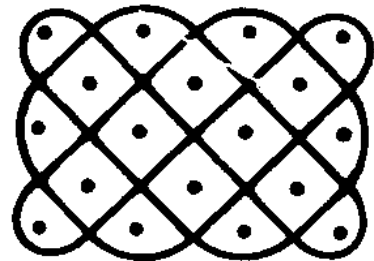
02.



A

?

C

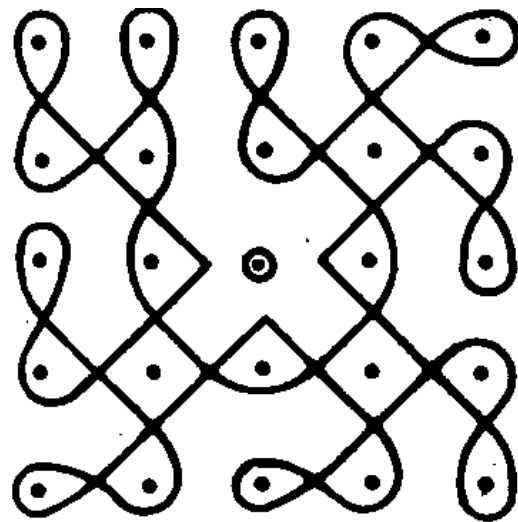


B

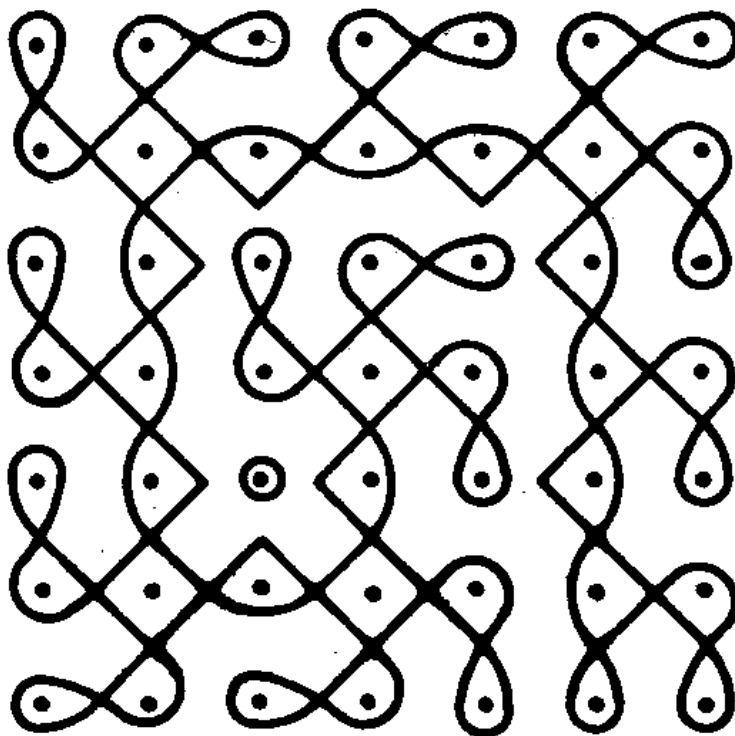
?

D

03.



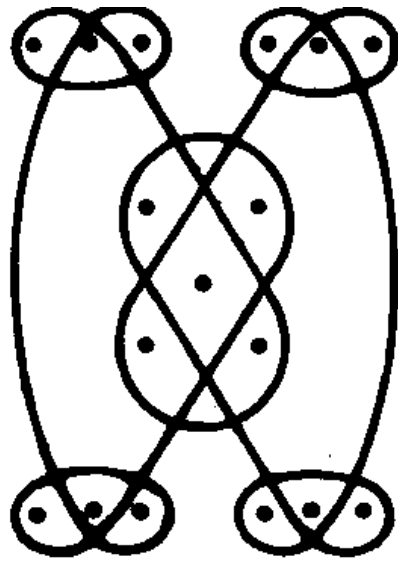
A



B

? ?
C D

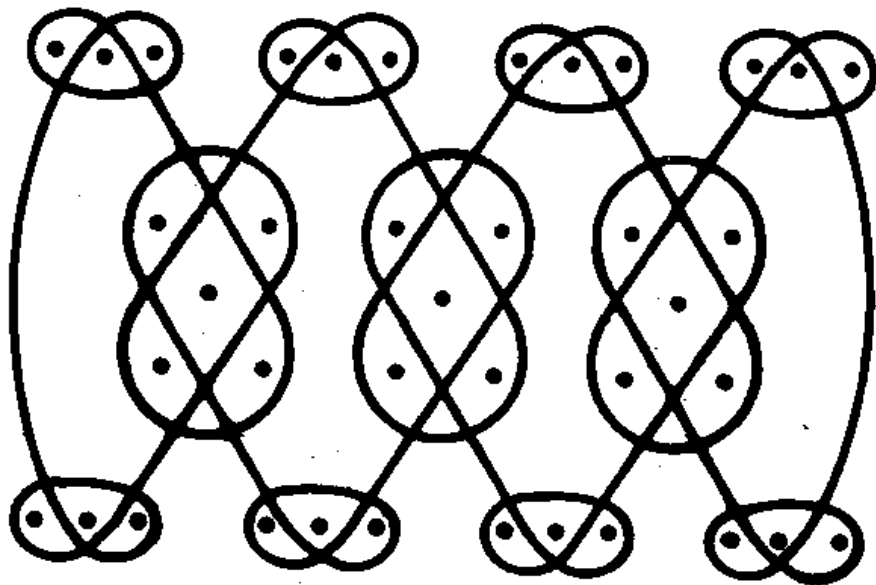
04.



A

?

B

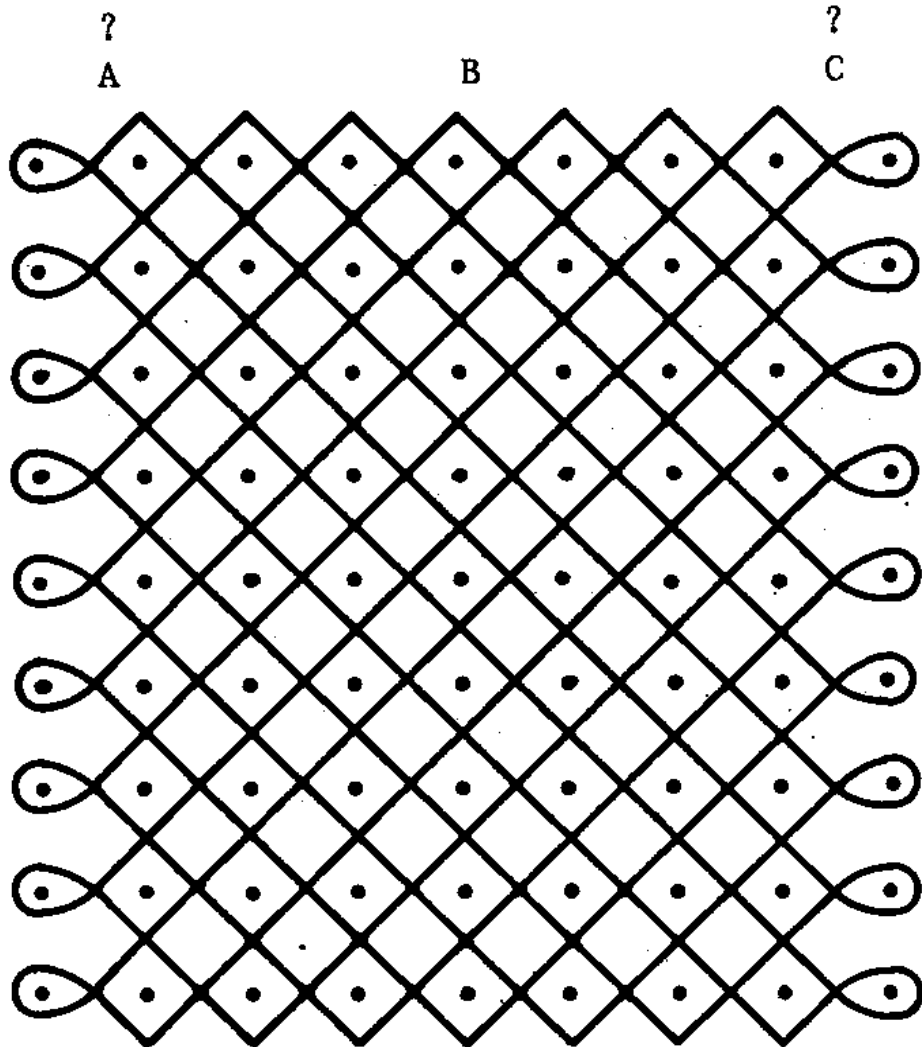
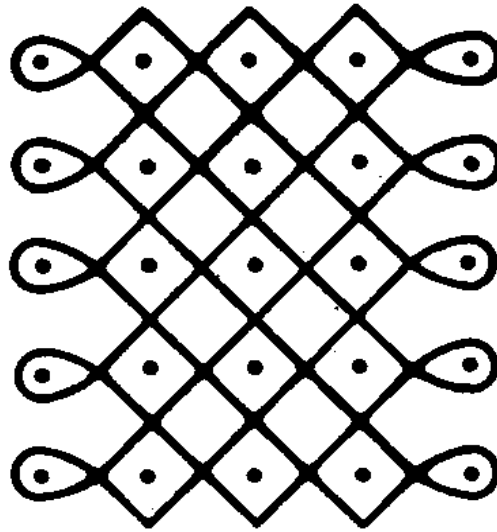


C

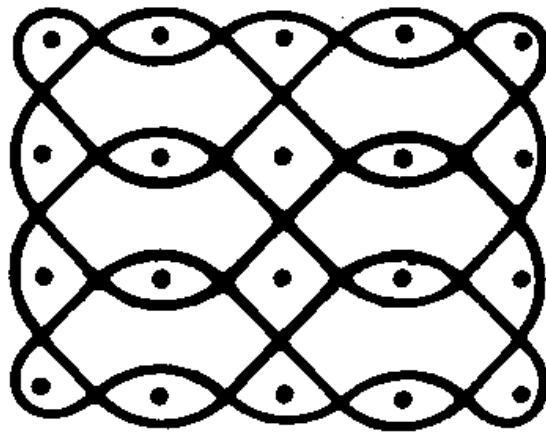
?

D

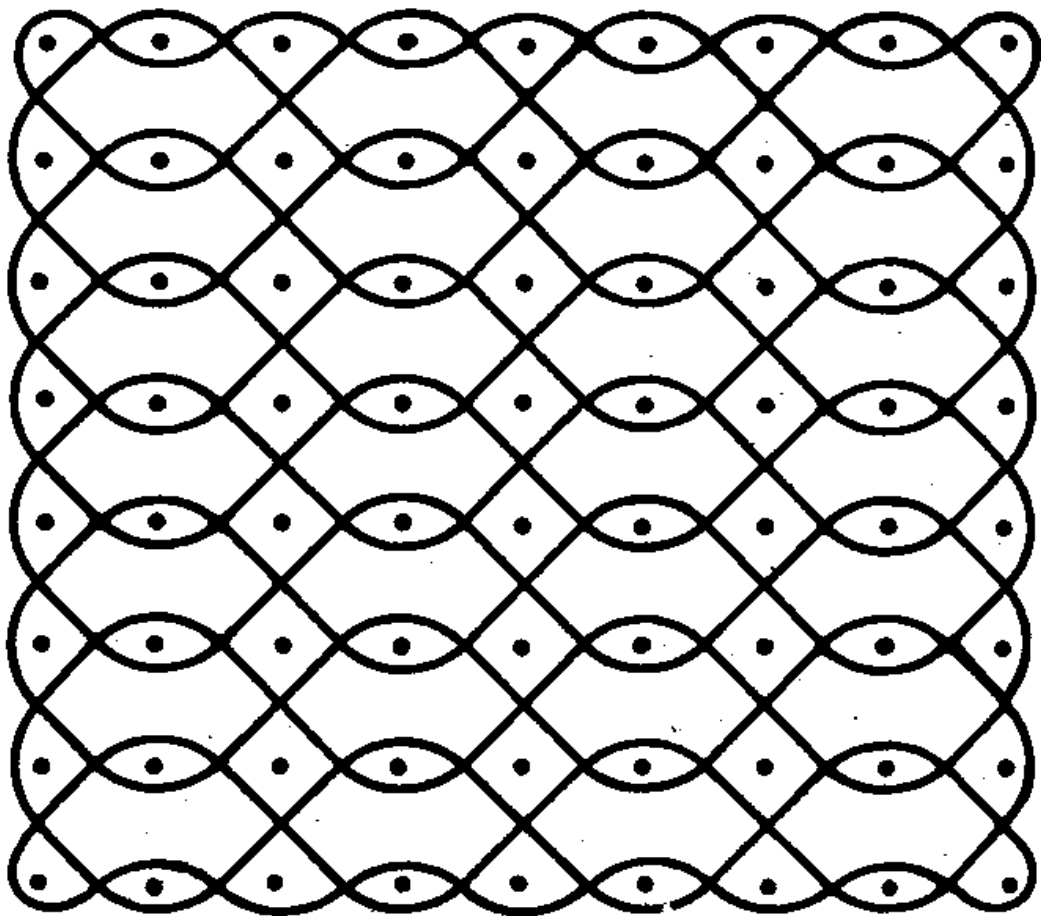
05.



06.



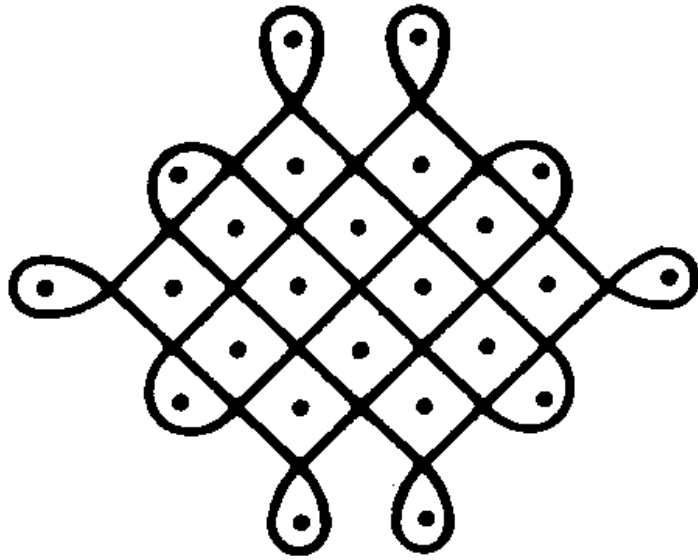
A



B

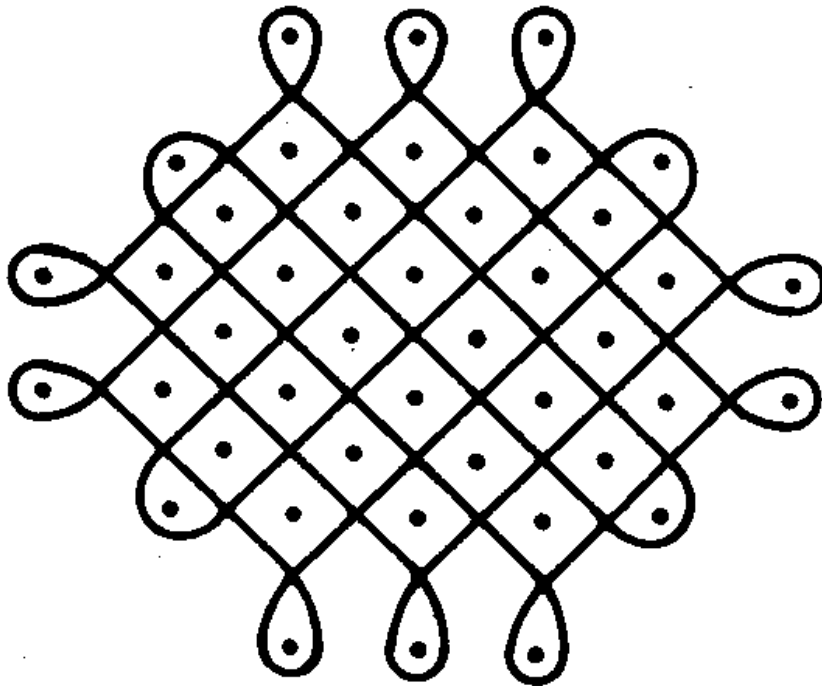
?
C

07.



?
A

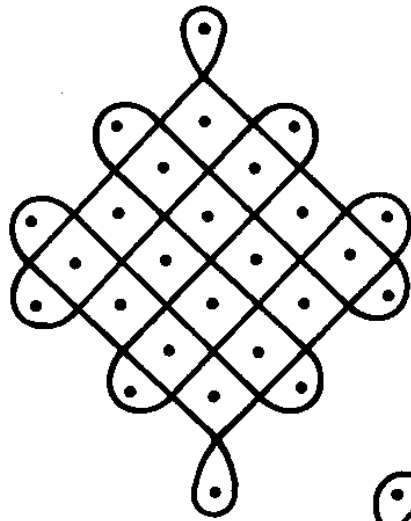
B



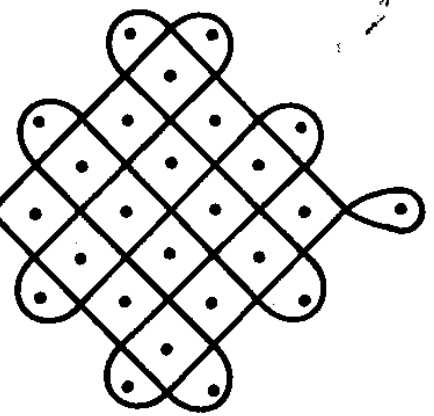
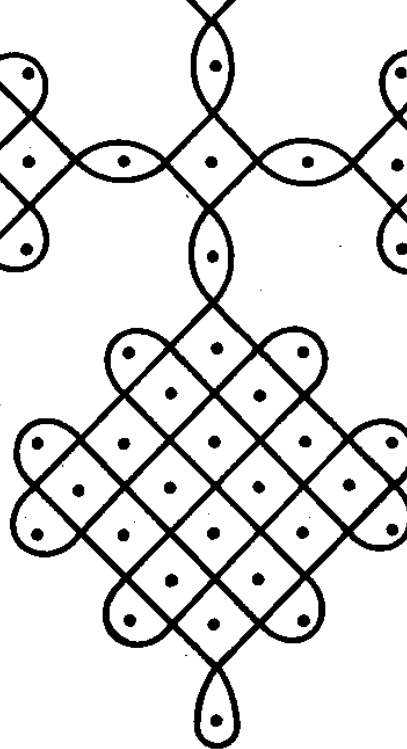
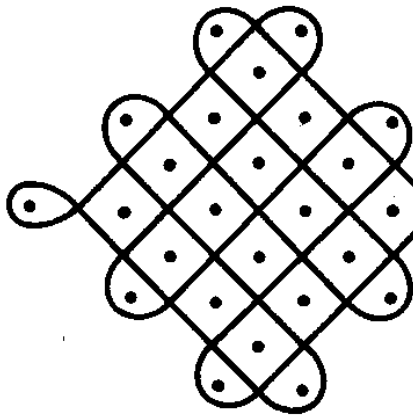
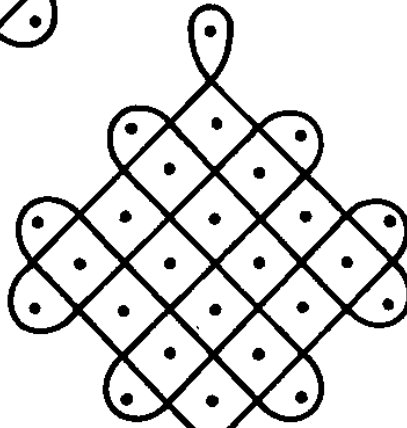
C

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D E

08.



A

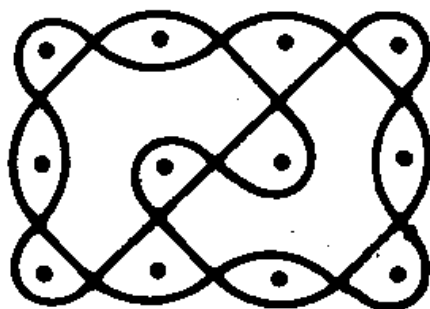


B

?

C

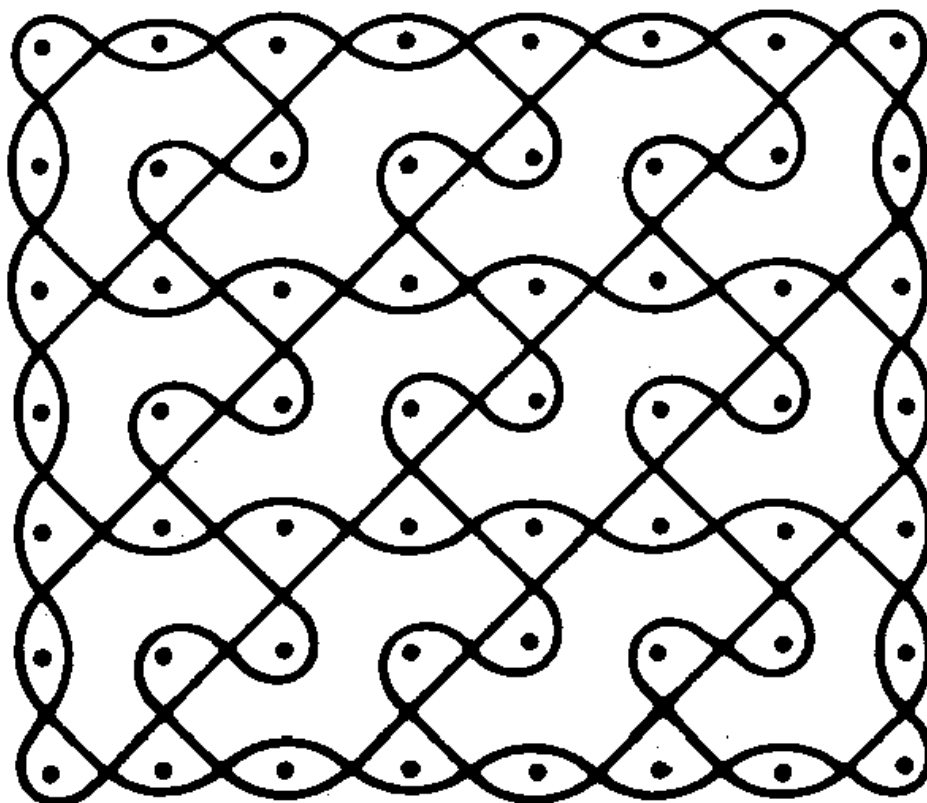
09.



A

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B



C

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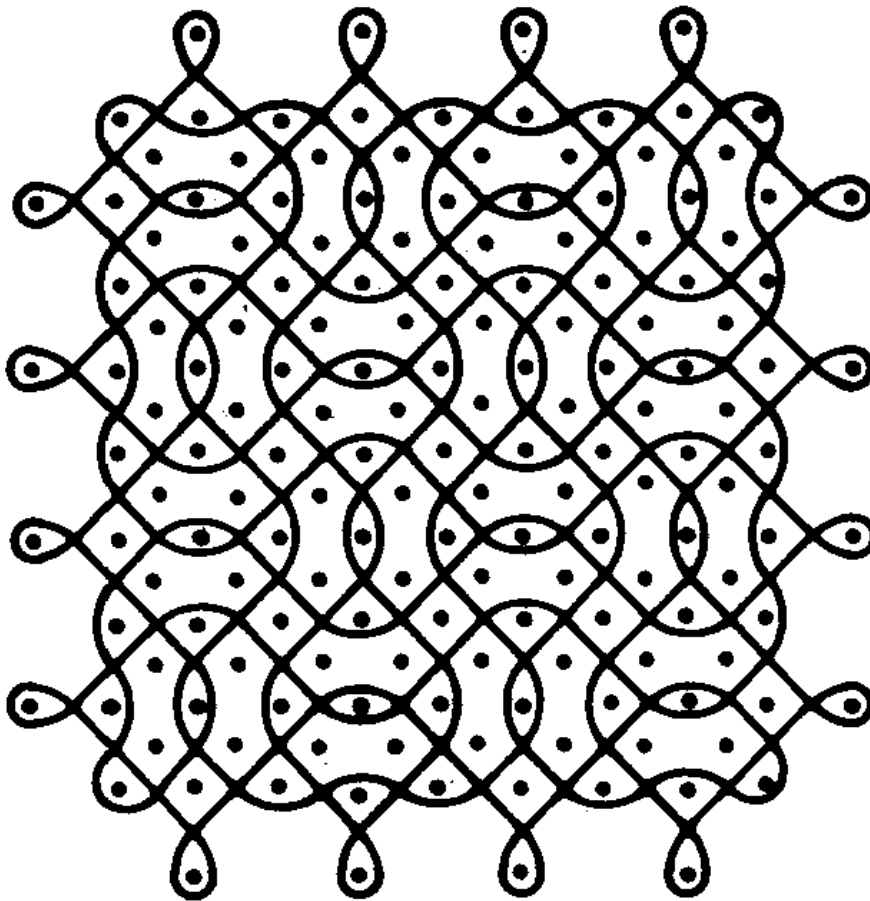
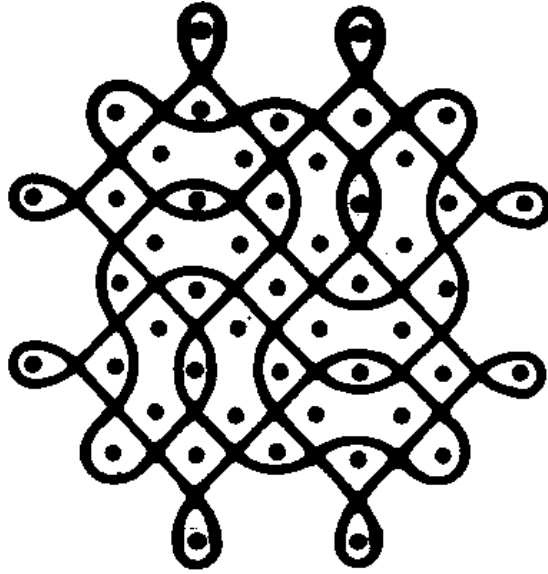
D

?

E

11.

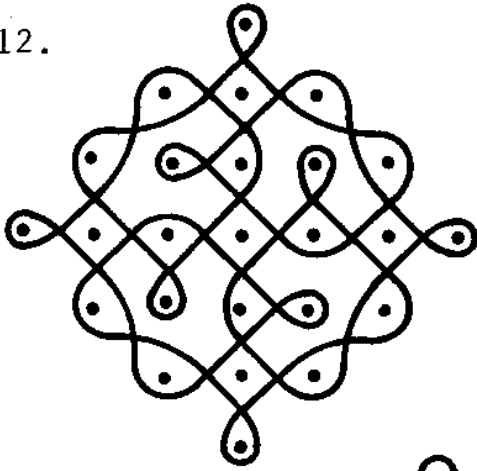
A



B

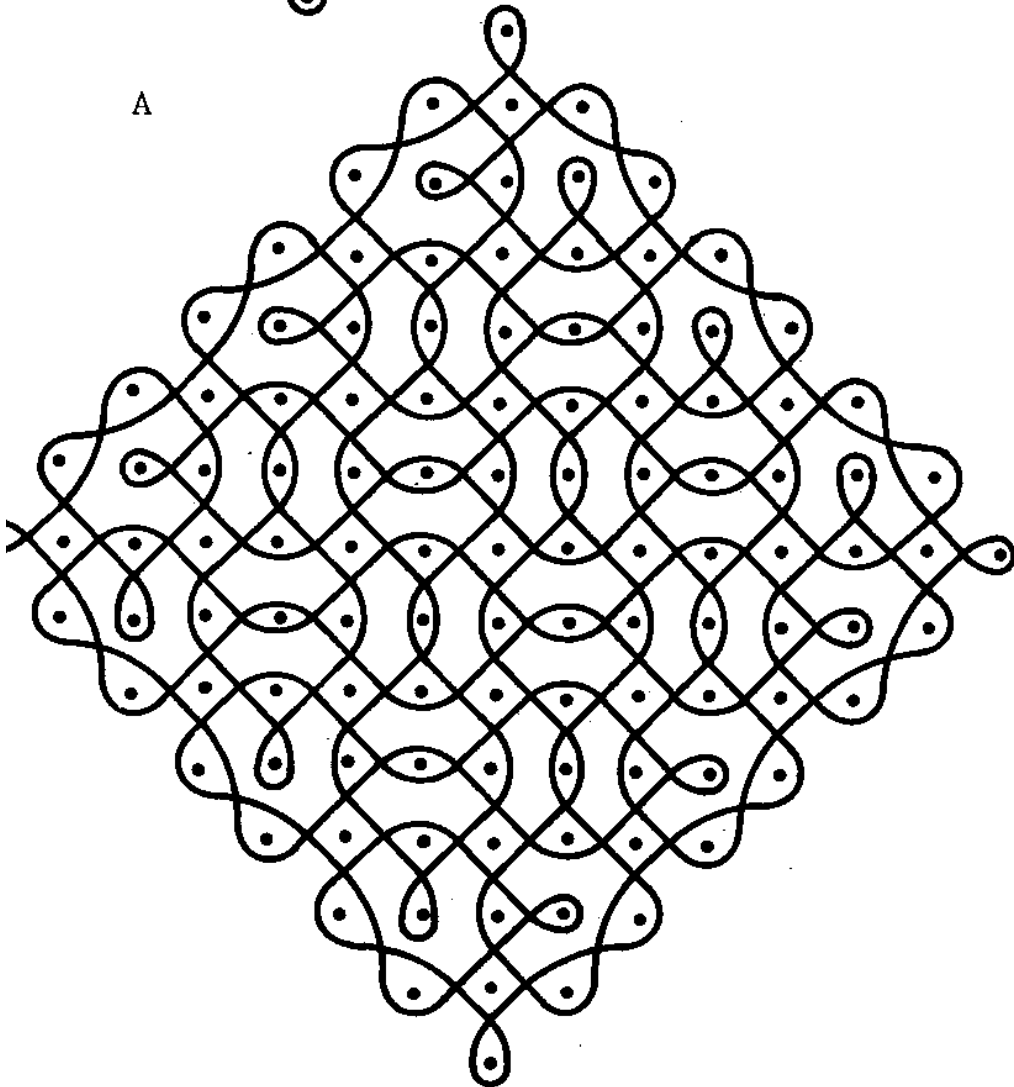
? ? ?
C D E

12.



?
B

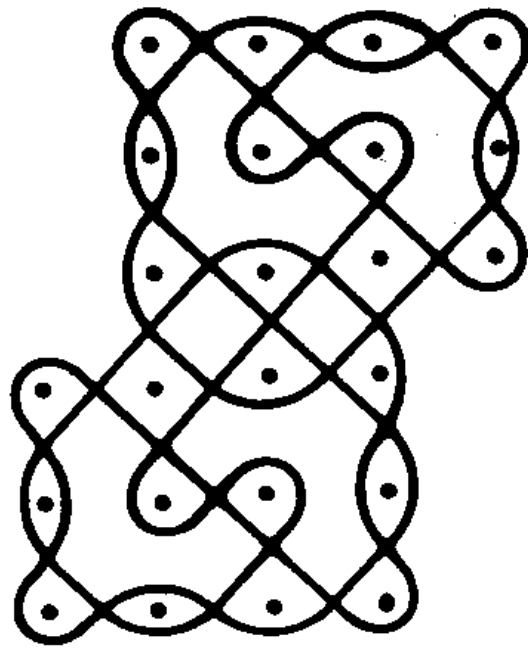
A



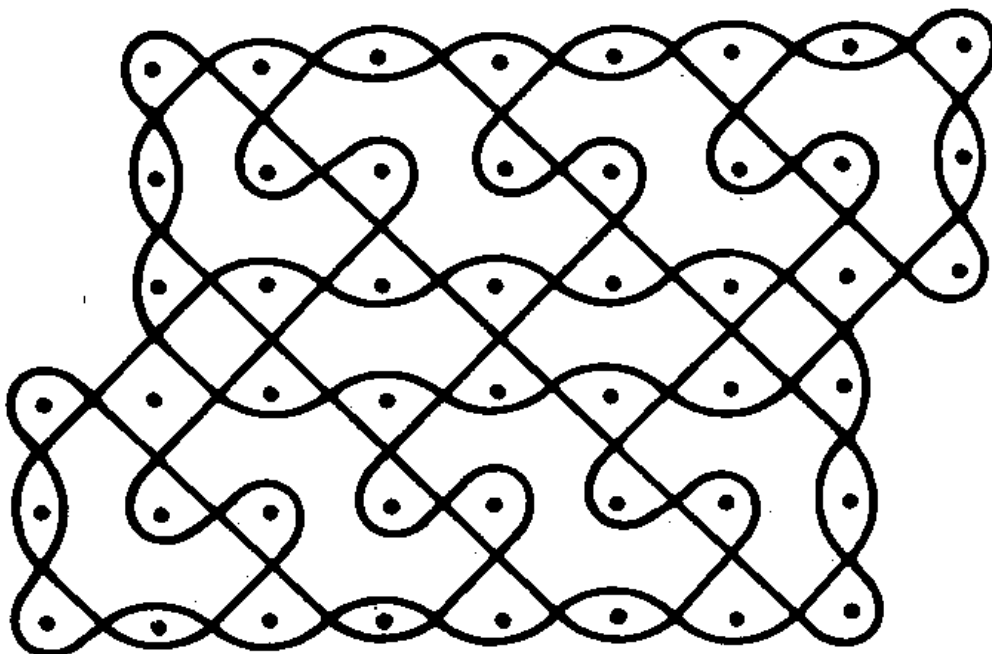
C

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D

13.



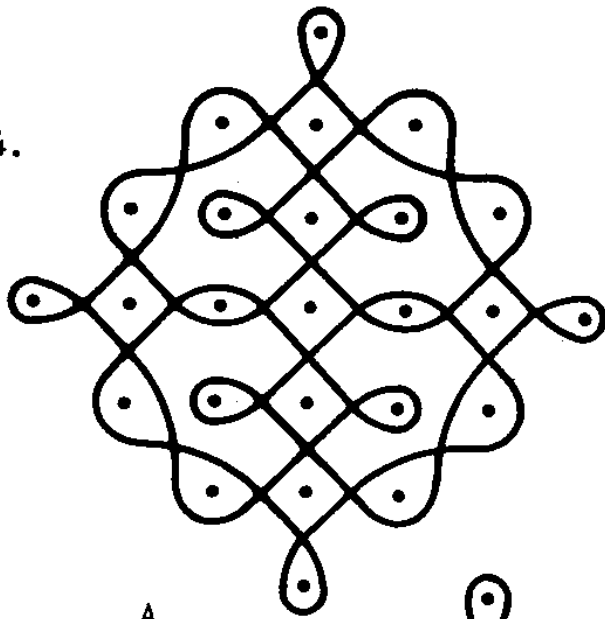
A



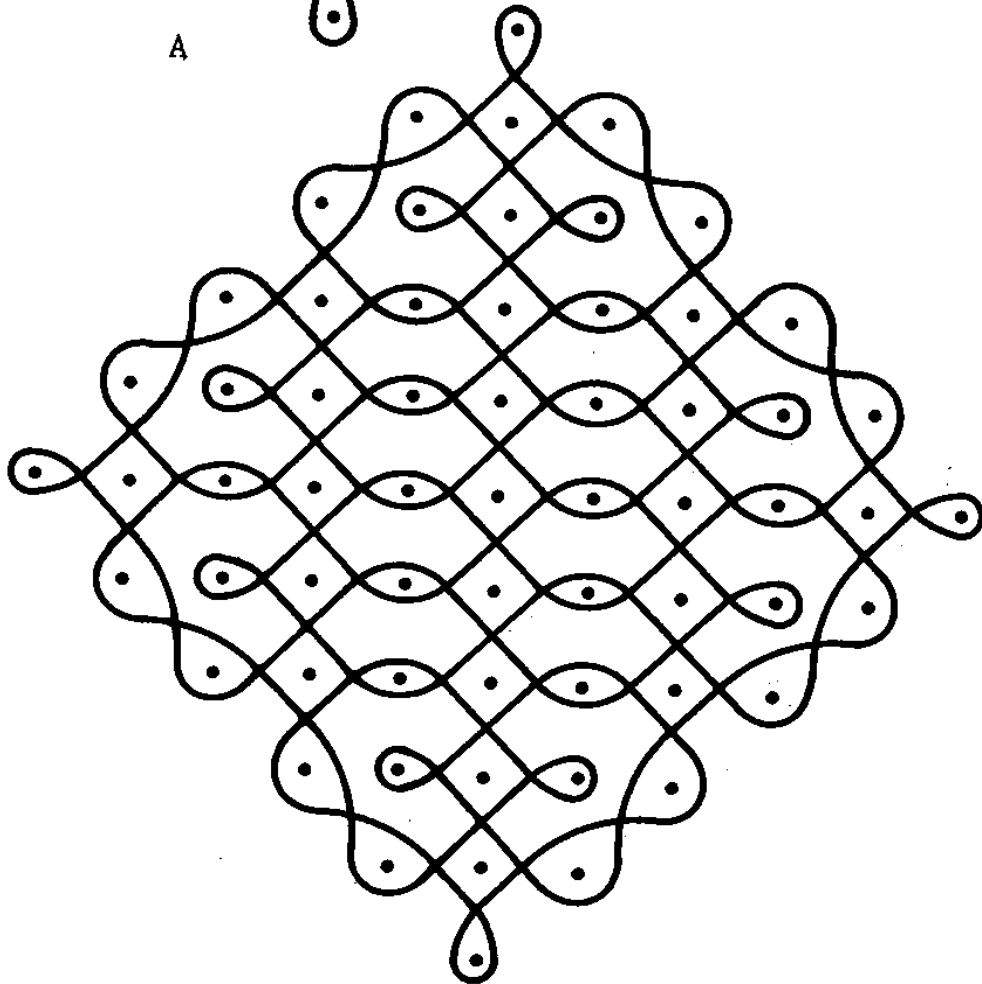
B

? ?
C D

14.



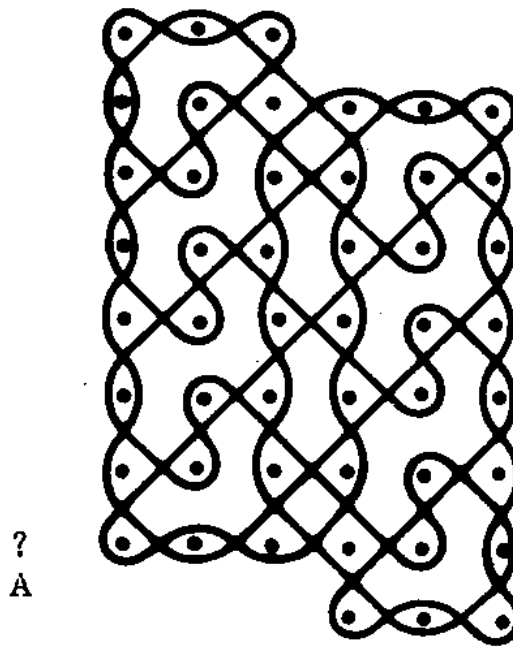
A



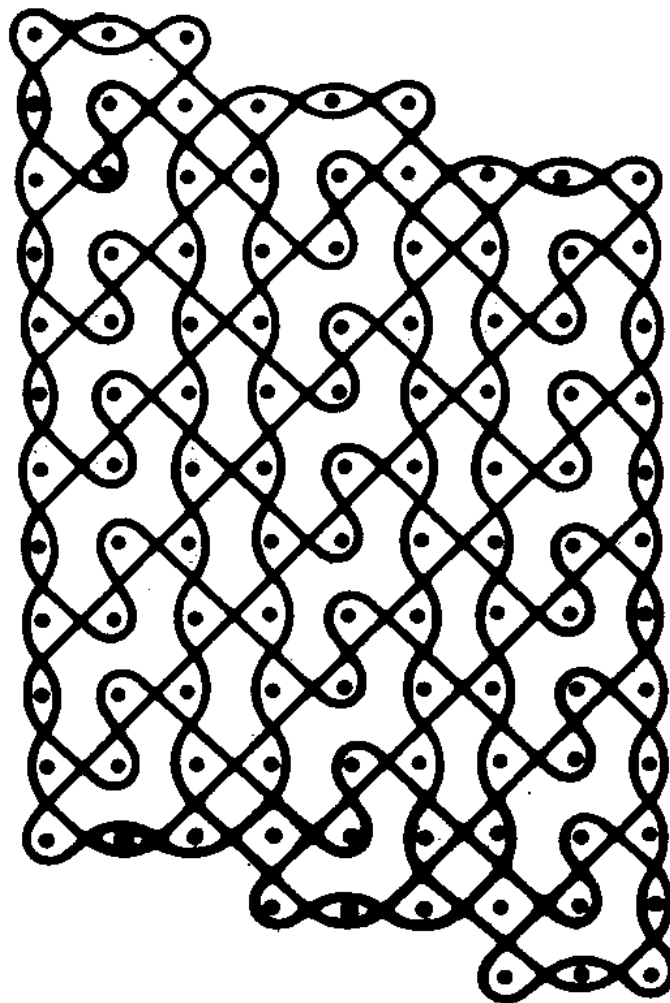
B

? ? ?
C D E

15.



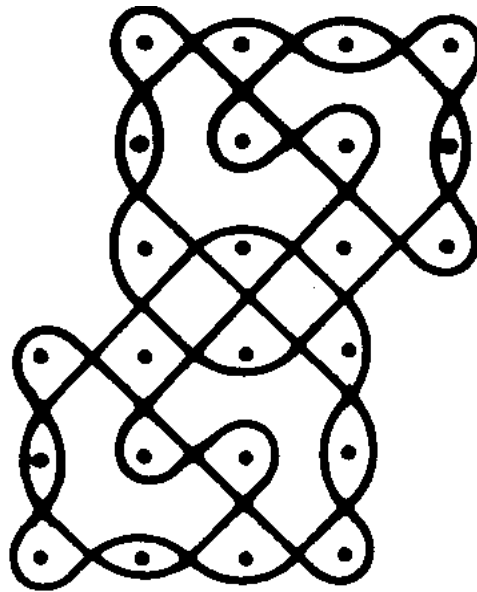
B



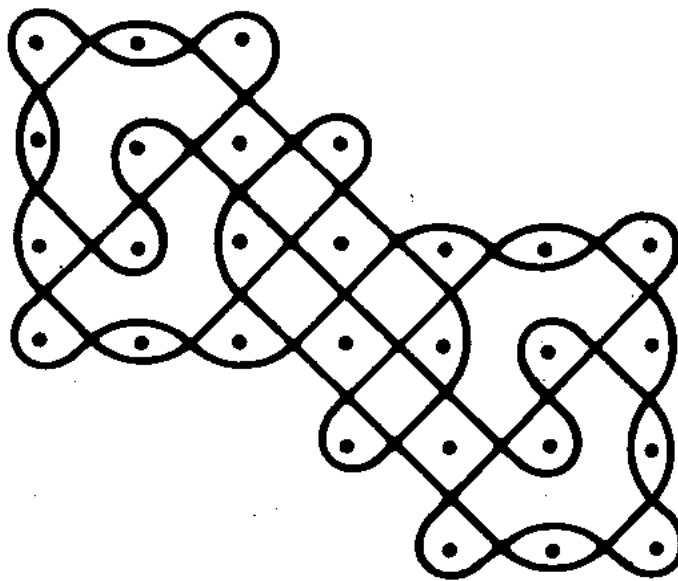
C

?
D

16.



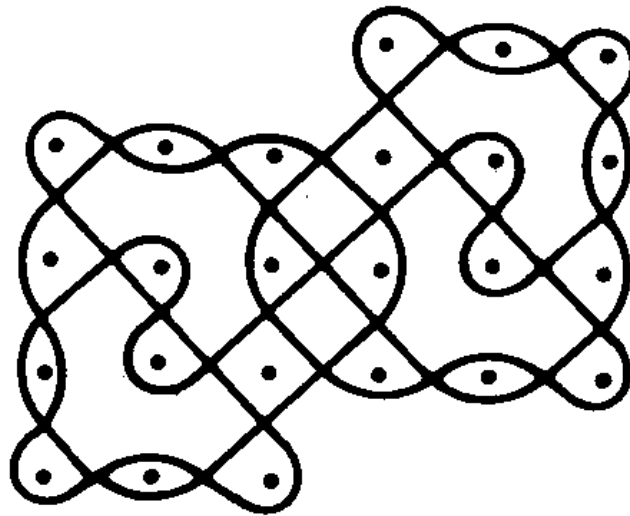
A



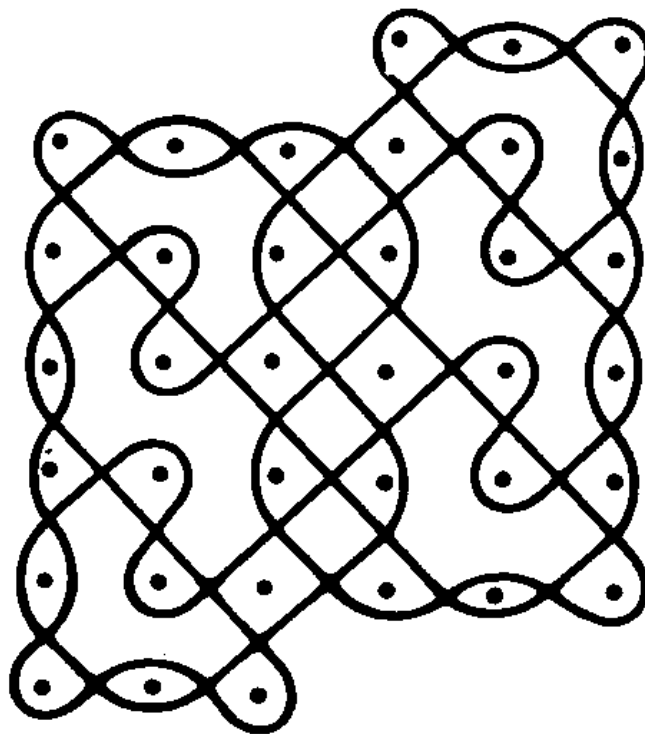
B

?
C

17.



A



B

? ?
C D

Fontes dos Desenhos

- 1C Desenho ideográfico dos Quiocos, representando uma ponte suspensa, feita com varas e lianas (F, p.259, 260);
- 2A, B Elementos ideográficos freqüentemente utilizados pelos Quiocos e Tamil (G 1 e 2);
- 3B Desenho ideográfico dos Quiocos, alusivo a um ninho de galinha escondido no colmo (F, p.273, 274);
- 4C Desenho ideográfico dos Quiocos, representando um saco típico usado no transporte de cargas (F, p.275, 276);
- 5D Ideograma Quioco representando um cemitério (reconstruído em G1);
- 6A Ideograma Quioco representando o estômago de um leão (F, p.279, 280);
- 7A, B, 8A Pietogramas tradicionais dos Tamil (G2);
- 9B, C Pietogramas Quiocos reconstruídos (G1);
- 10B Ideograma Tamil, representando um “Nó de Brahma” (símbolo de proteção), reconstruído em G2;
- 11A Pietograma tradicional Tamil (reconstruído em G2);
- 14C “Nó de Brahma” (reconstruído em G2).

Referências

- F Fontinha, M:Desenhos na Areia dos Quiocos do Nordeste de Angola, IICT, Lisboa, 1983.
- G1 Gerdes, P.:Reconstruction and extension of lost symetries: examples from the Tchokwe of North-Est Angola, publicação UEM, Maputo, 1988.
- G2 Gerdes, P.:Reconstruction and extension of lost symmetries: examples from the Tamil of South India. (a ser publicado em: I. Pargittai, ed.: Symmetry 2, Pergamon Press, New York, 1989.)