

**Curiosidade
Desafio
Divertimento**

**PSIEM-
GEPEMAI**

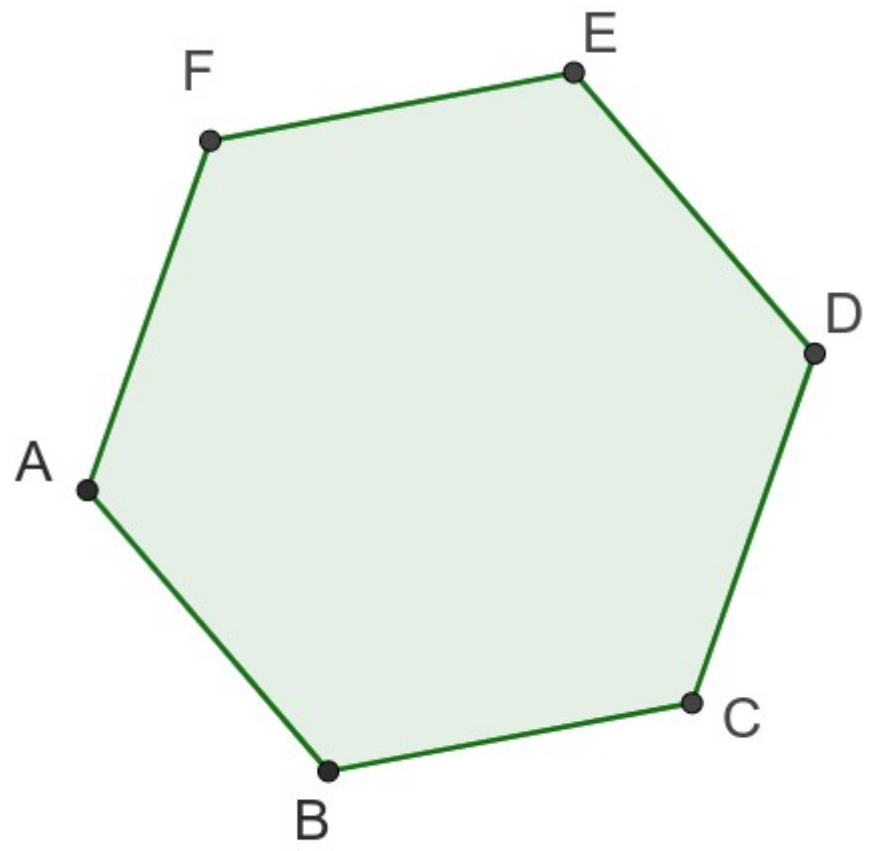
**Rita S.
Guimarães**

08/11/2021

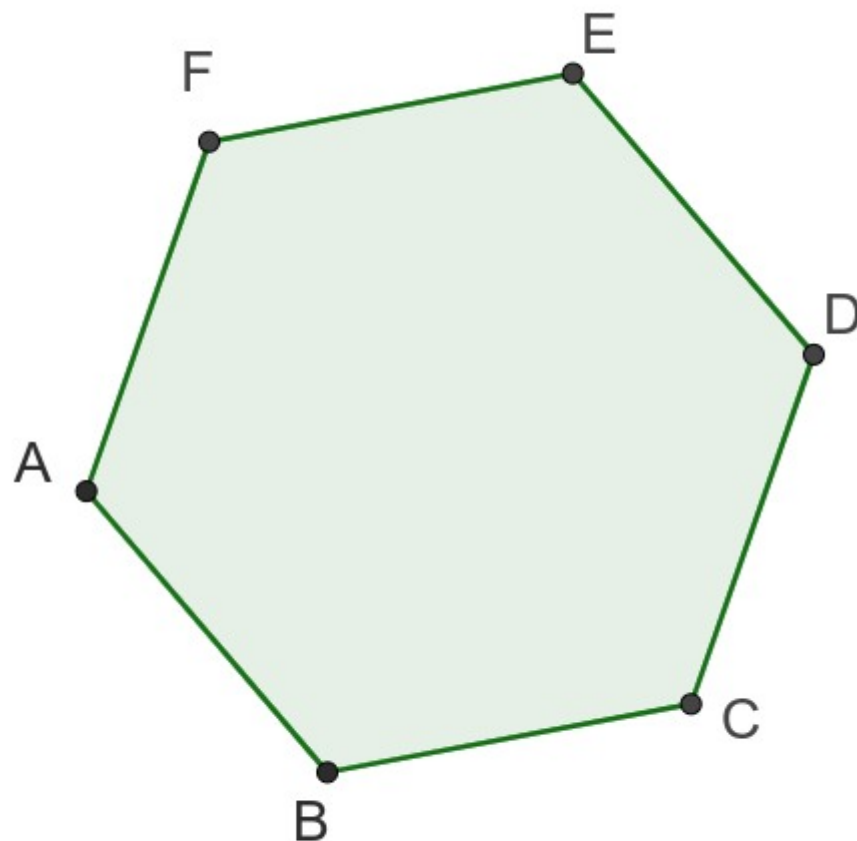
Curiosidade

Como calcular o
ângulo interno de um
polígono regular?

Imagine uma pista de caminhada
no formato a seguir...

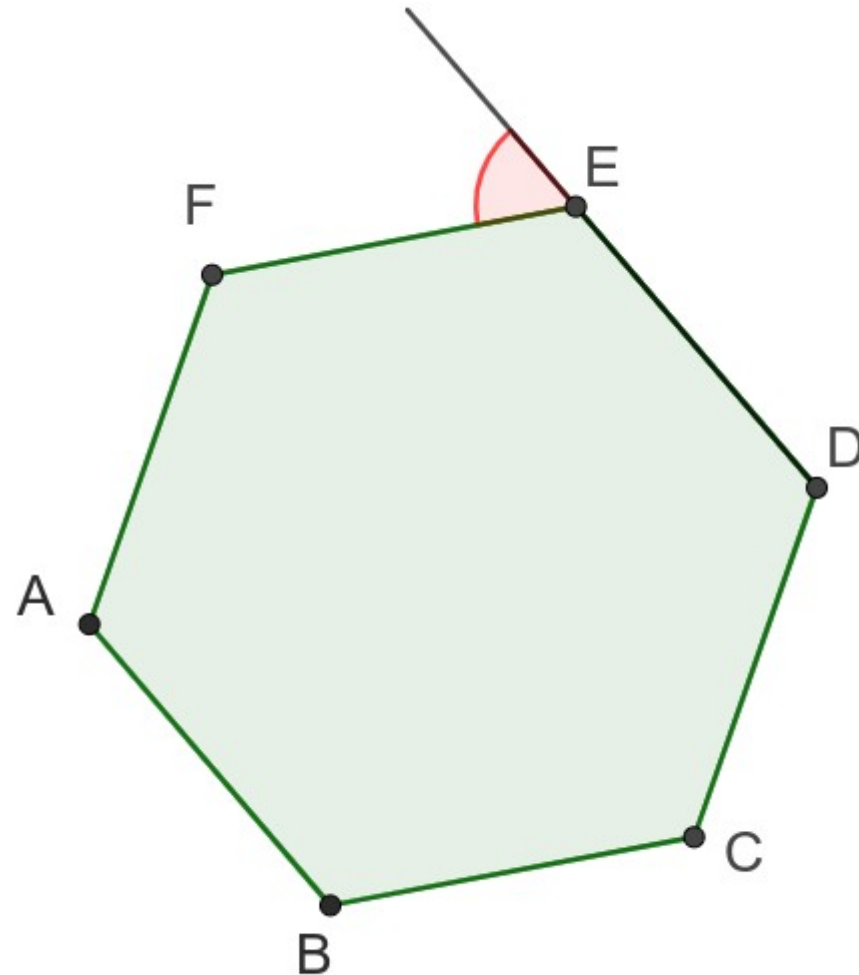


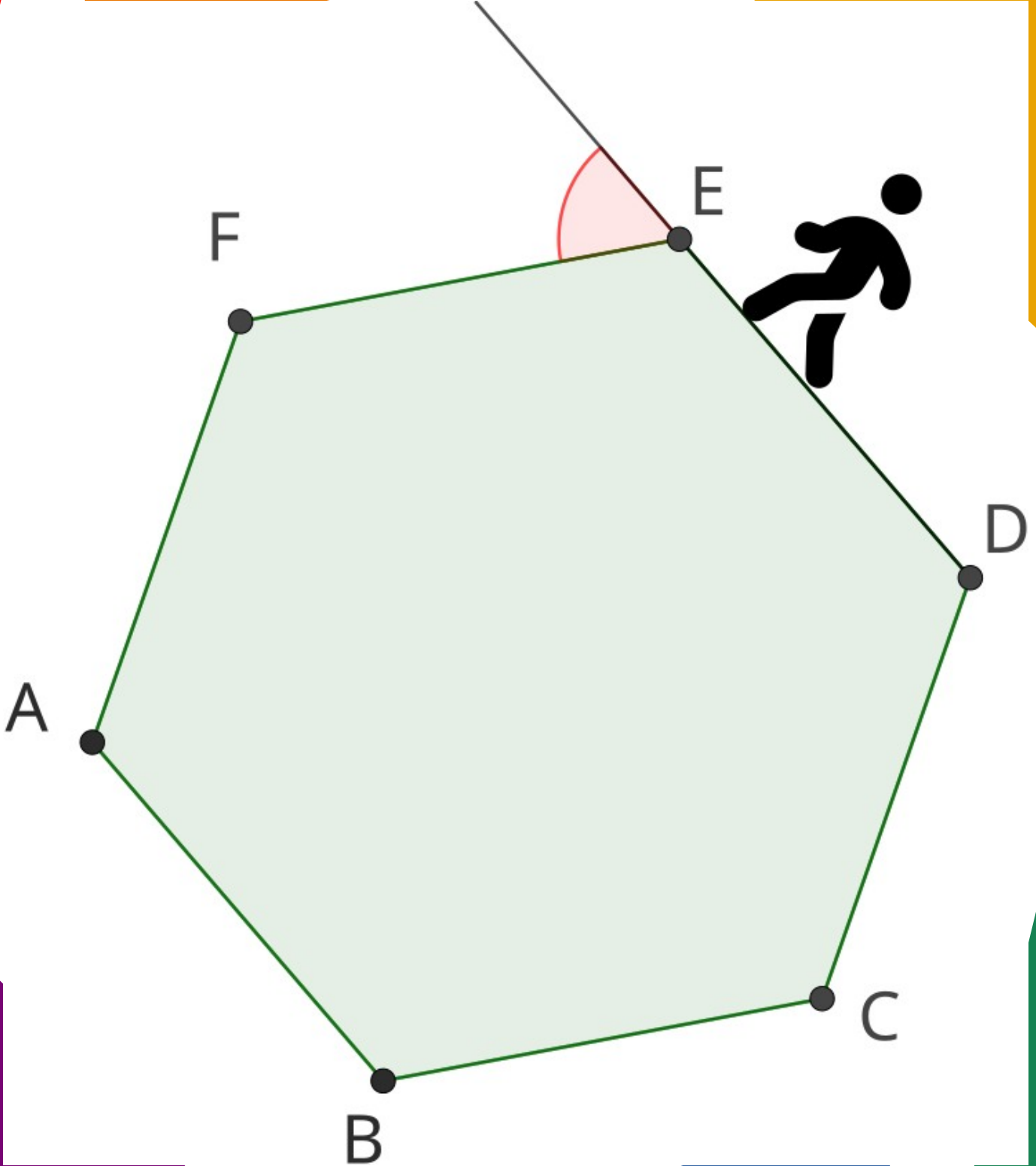
Imagine uma pista de caminhada
no formato a seguir...



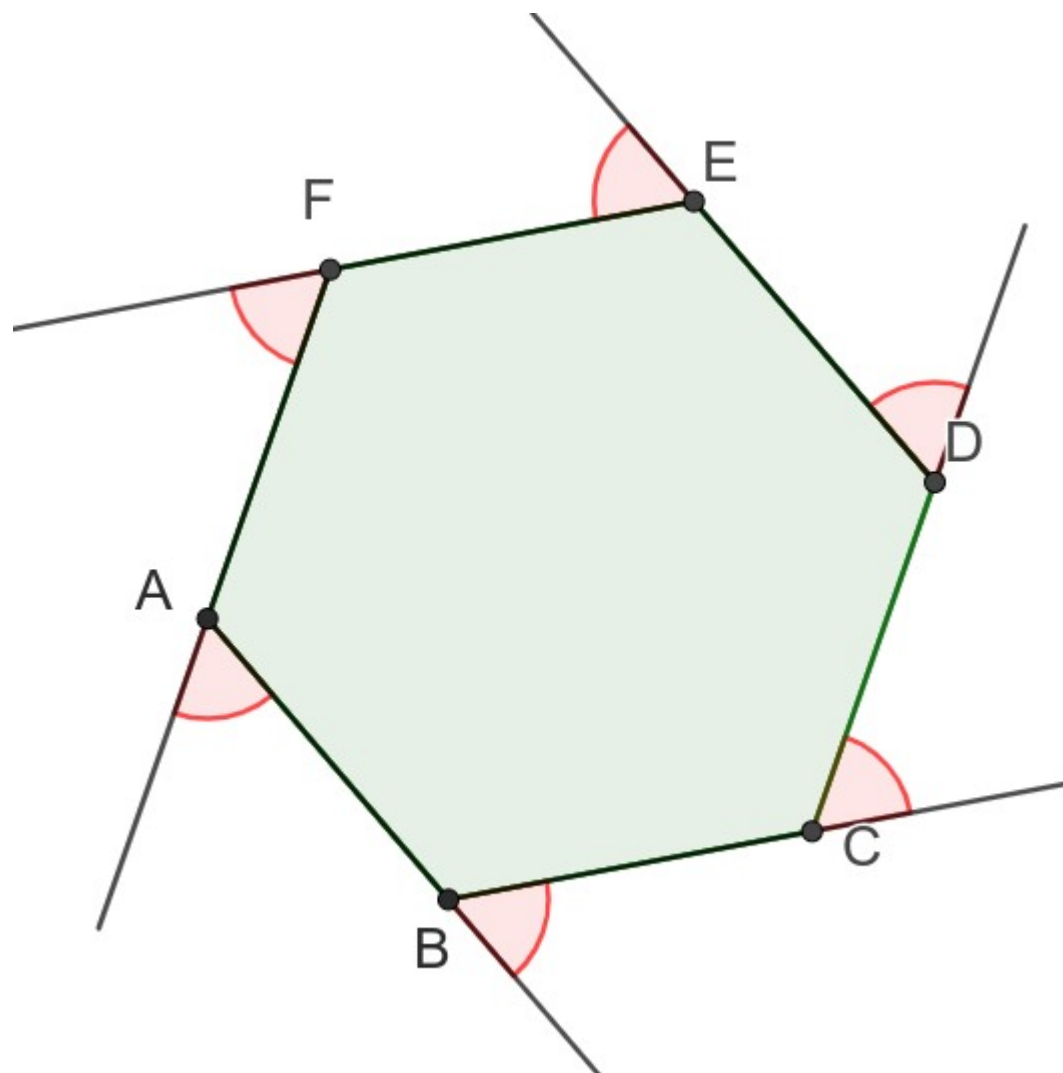
Hexágono regular
6 lados e 6 ângulos congruentes.

Em cada canto (vértice) será preciso fazer um giro...

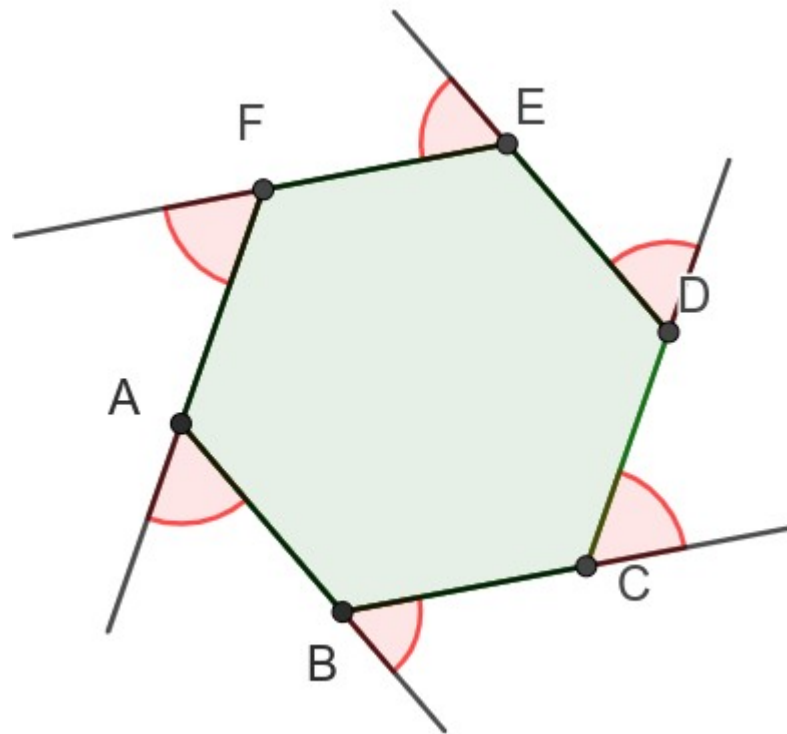




Para a volta completa...

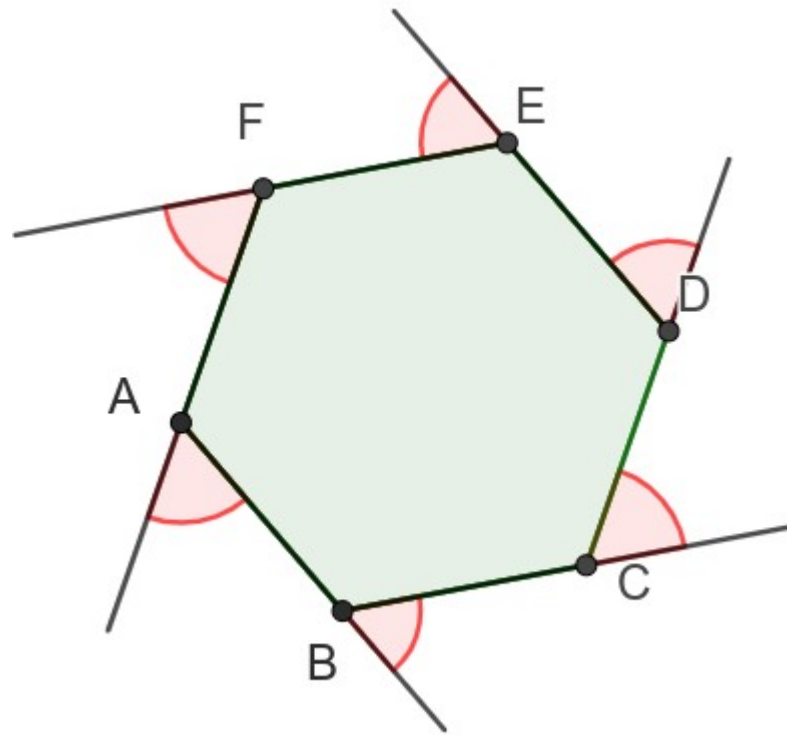


Quantos graus eu tive
que girar?



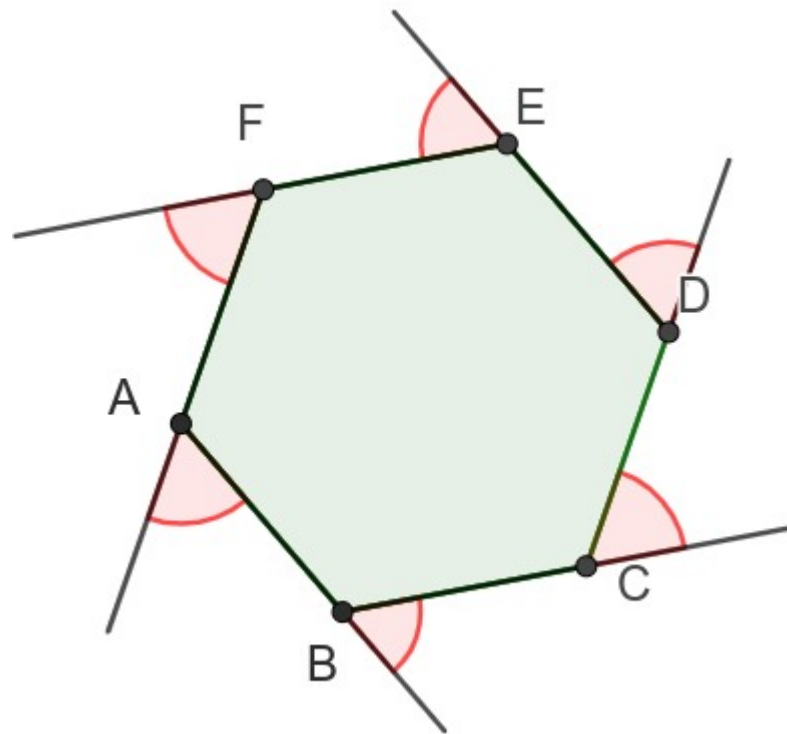
Quantos graus eu tive que girar?

- Ao todo, 360°



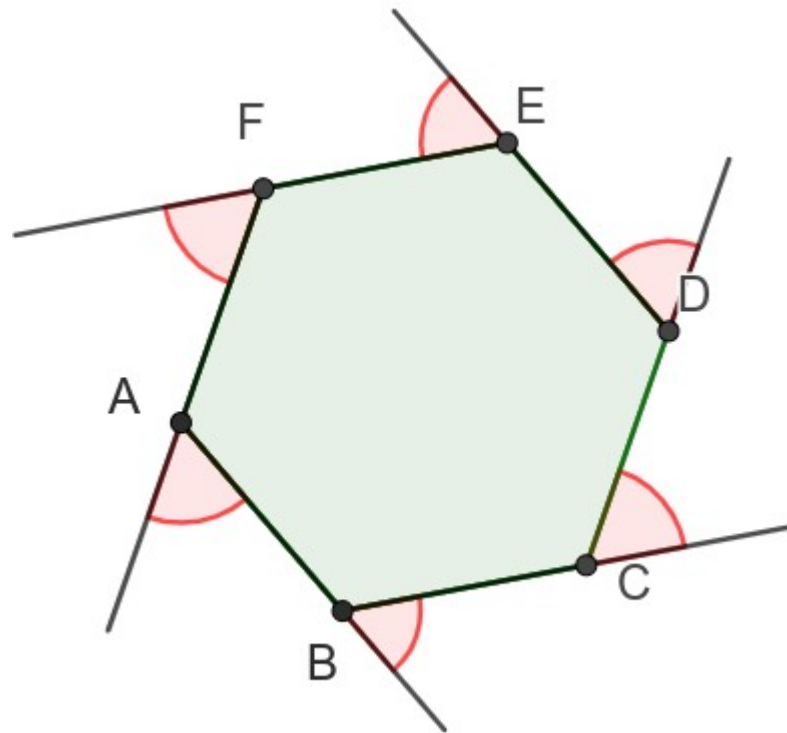
Quantos graus eu tive que girar?

- Ao todo, 360°
- Cada um será...



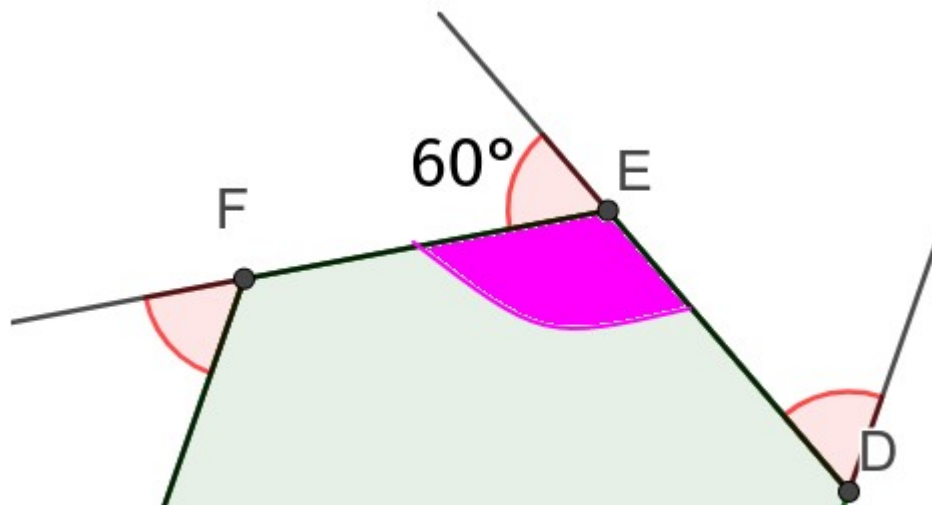
Quantos graus eu tive que girar?

- Ao todo, 360°
- Cada um será... $360^\circ \div 6 = 60^\circ$



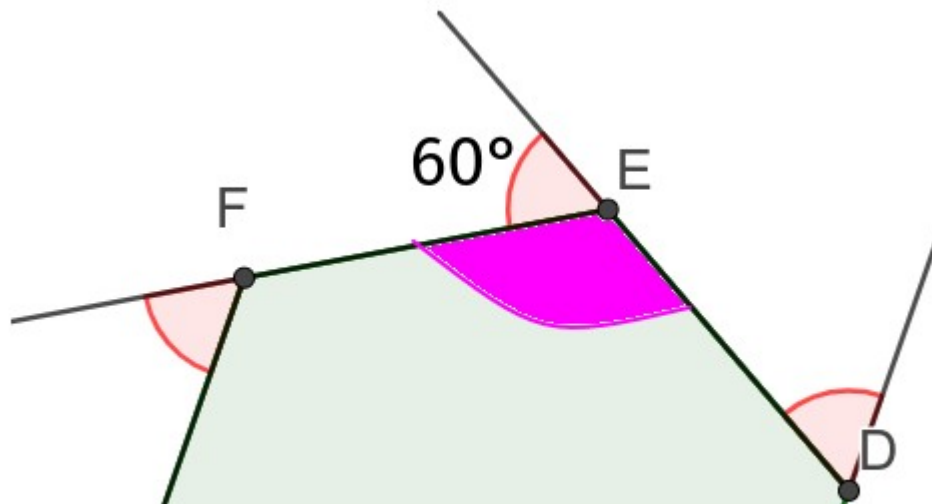
Quantos graus eu tive que girar?

- Ao todo, 360°
- Cada um será... $360^\circ \div 6 = 60^\circ$
- Qual será o valor do ângulo rosa?

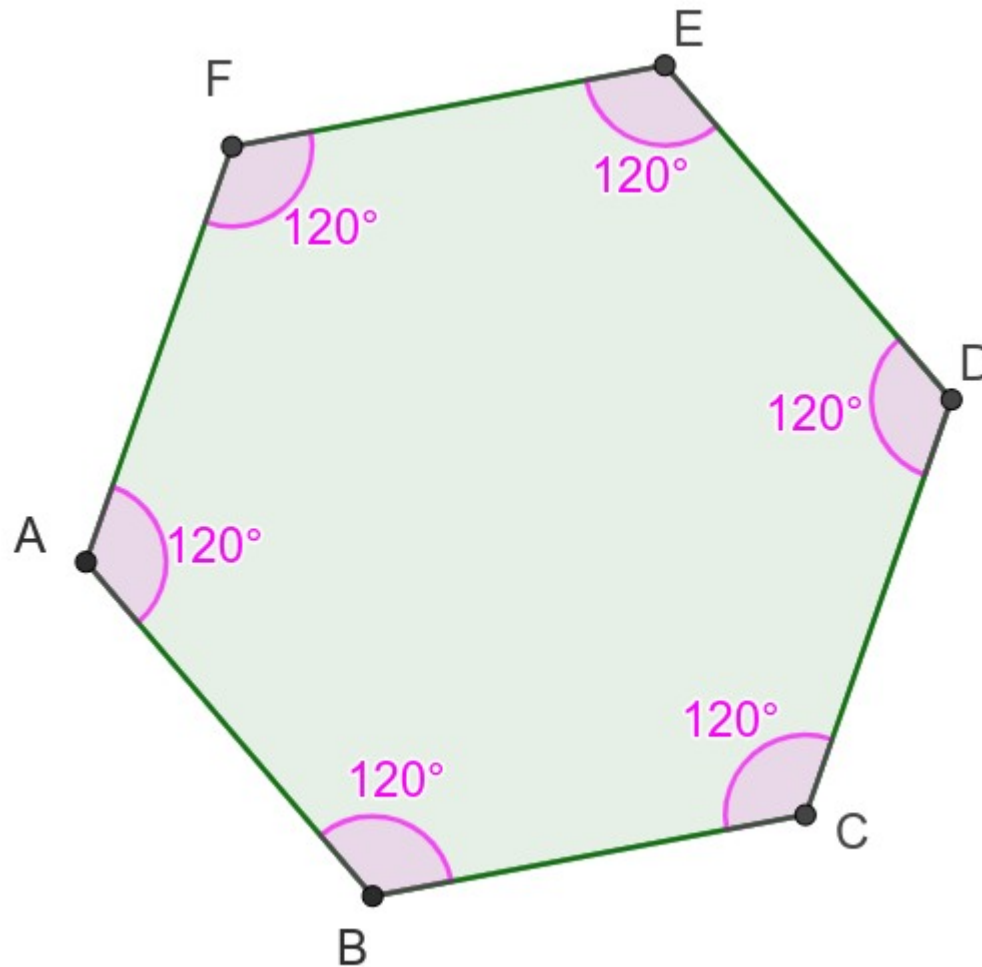


Quantos graus eu tive que girar? que girar?

- Ao todo, 360°
- Cada um será... $360^\circ \div 6 = 60^\circ$
- Qual será o valor do ângulo rosa?
- $180^\circ - 60^\circ = 120^\circ$



Ângulos internos do hexágono regular



Ângulos internos de outros polígonos regulares

<https://www.geogebra.org/m/adwcynzs>

The image features a vibrant, abstract background composed of several overlapping, irregularly shaped triangles in various colors: red, orange, yellow, green, blue, and purple. The triangles are separated by thin white borders, creating a dynamic, layered effect. In the upper-left red triangle, the word "Desafio" is written in a bold, white, sans-serif font.

Desafio

Desafio

Ladrilhamento

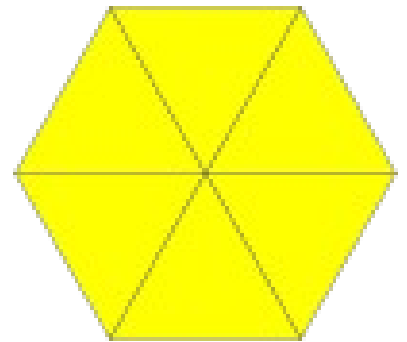
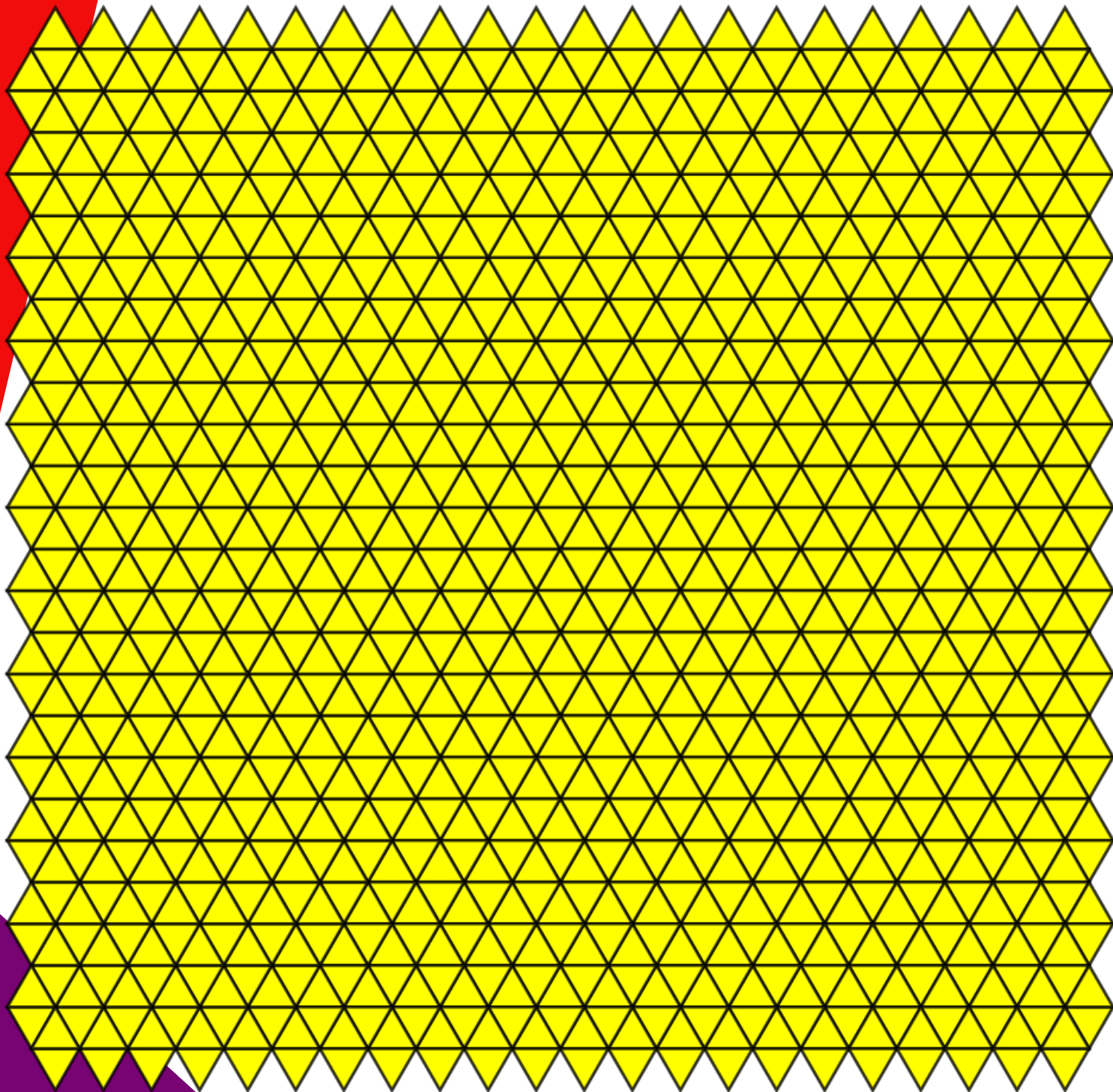
recobrimento do plano, sem sobreposição e sem buracos, usando figuras geométricas.

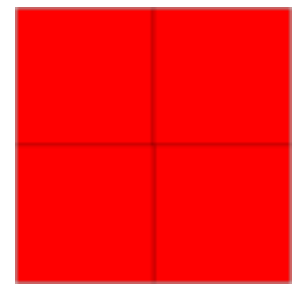
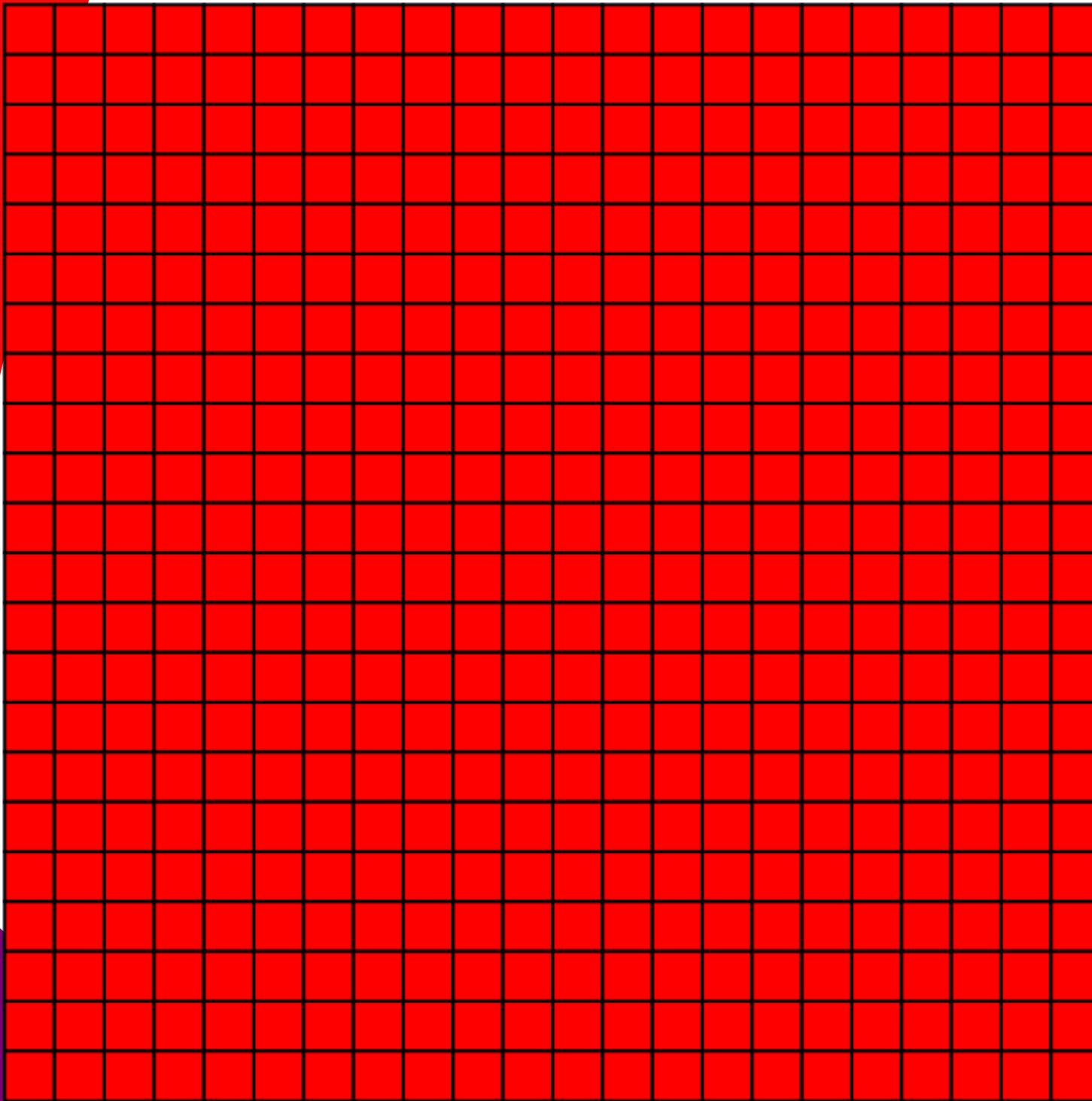
Ladrilhamentos com polígonos regulares

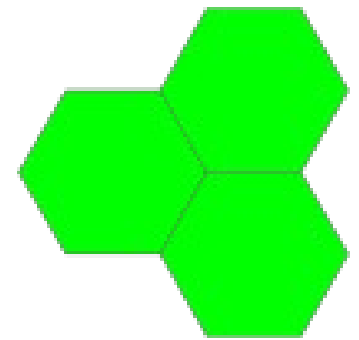
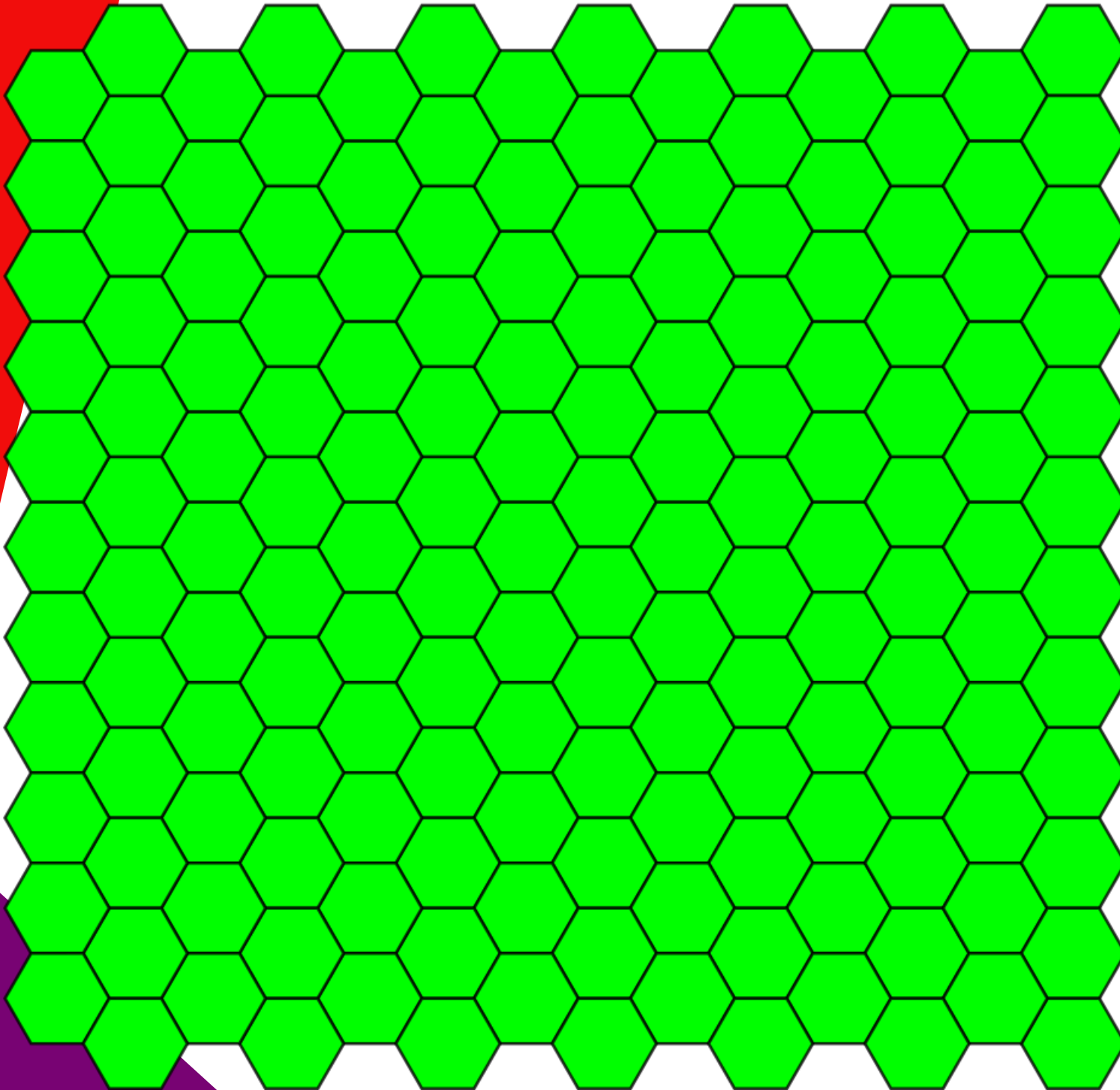
<https://www.geogebra.org/m/gh4b5gmv>

Ladrilhamentos com polígonos regulares

(1) Usando apenas um tipo de polígono

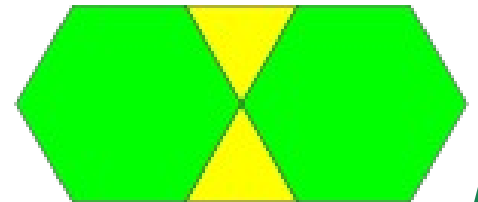
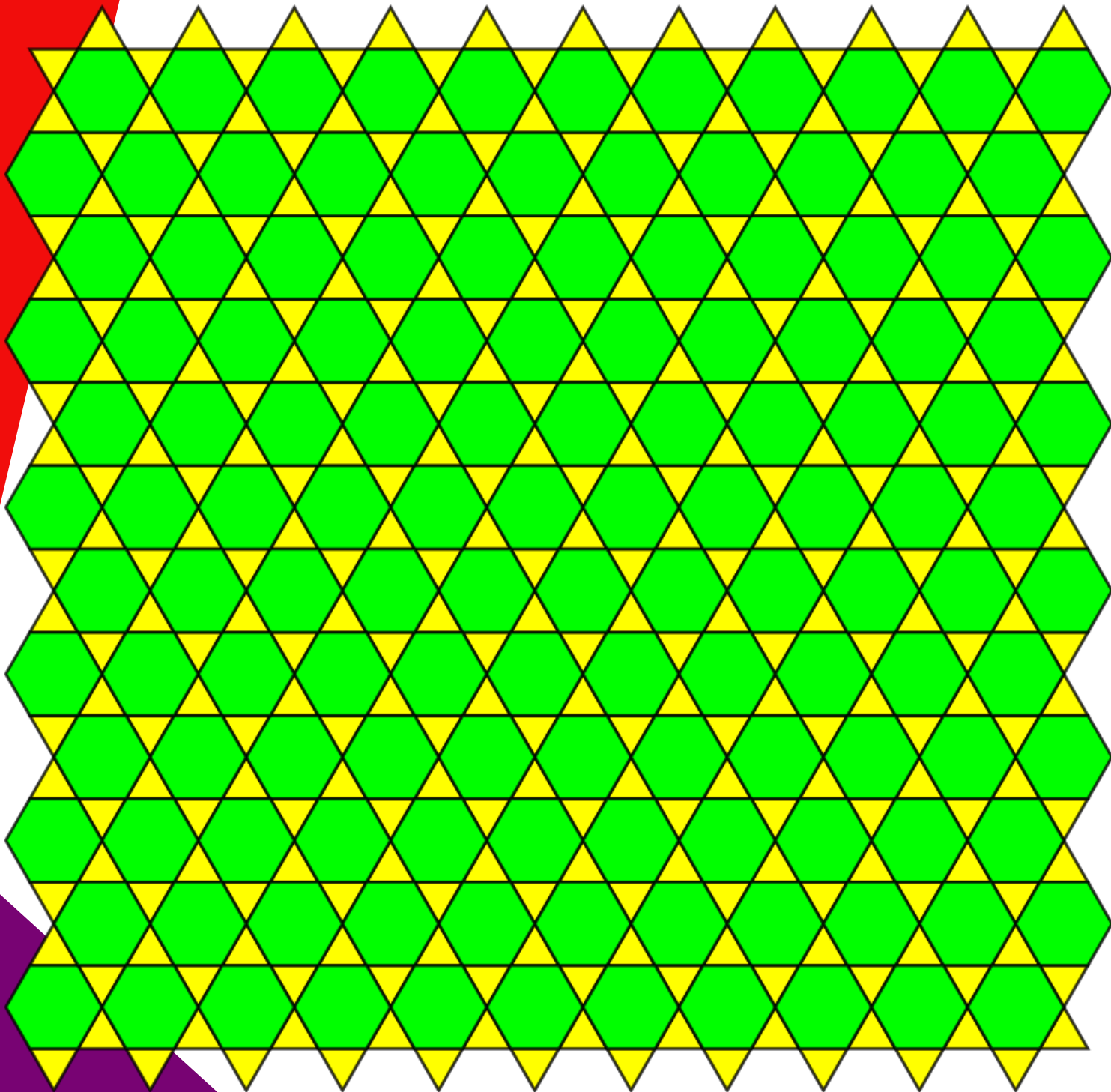


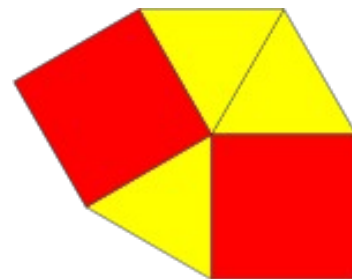
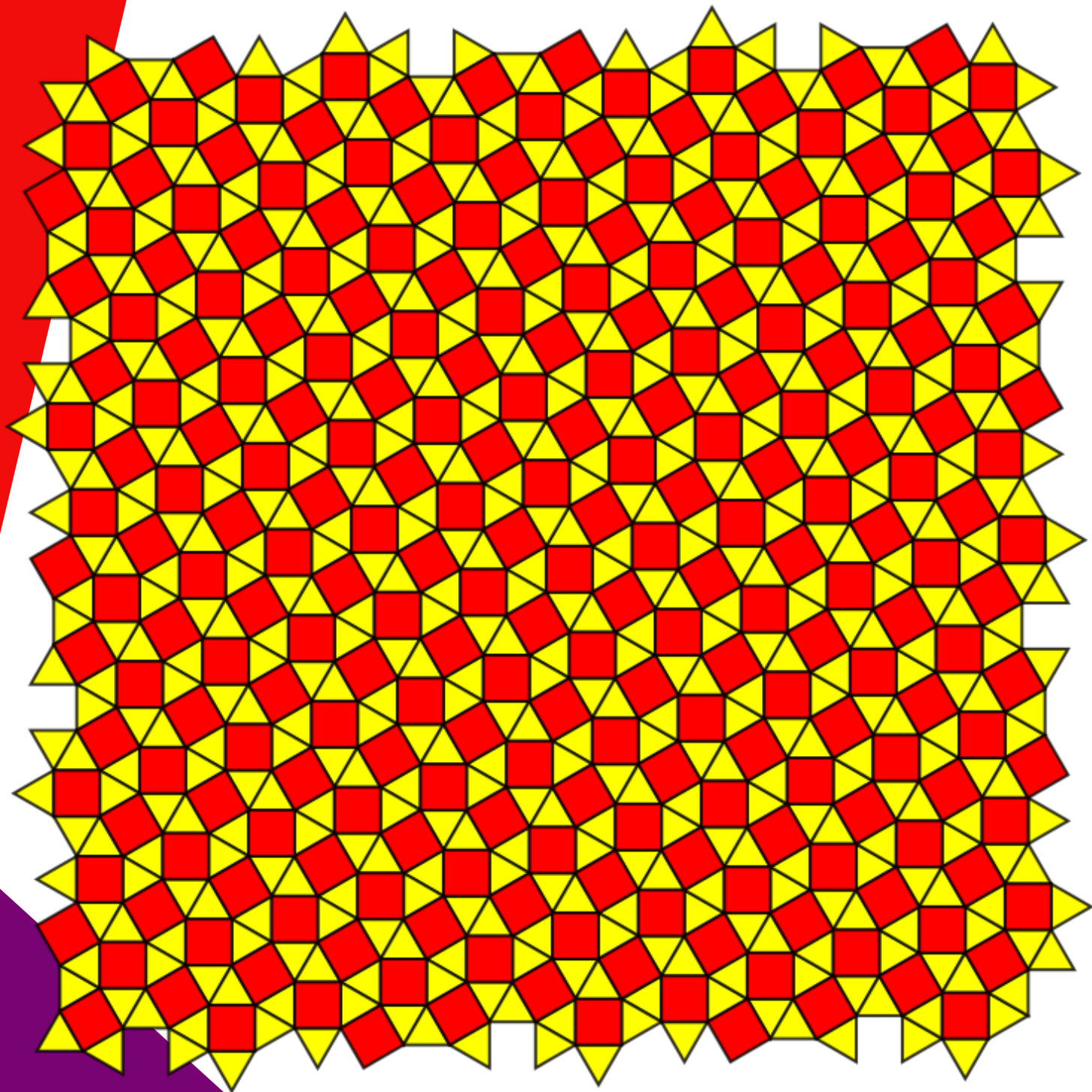


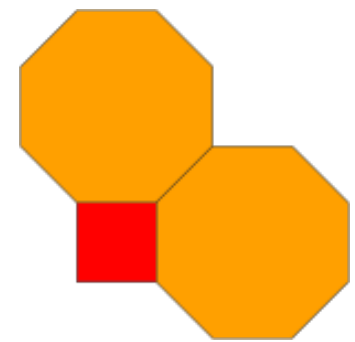
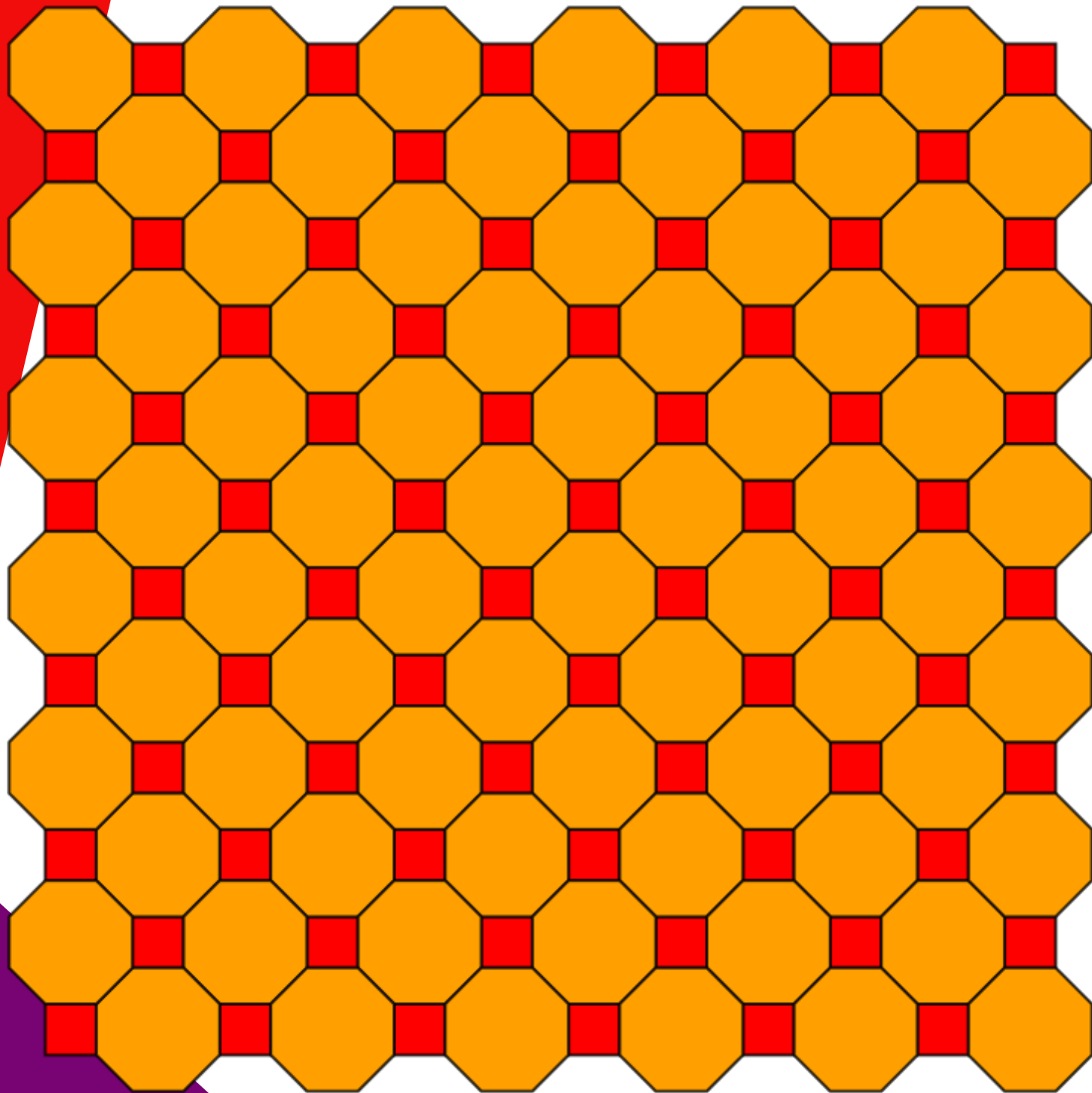


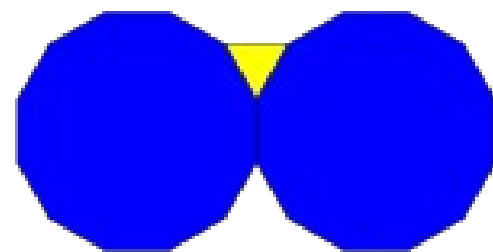
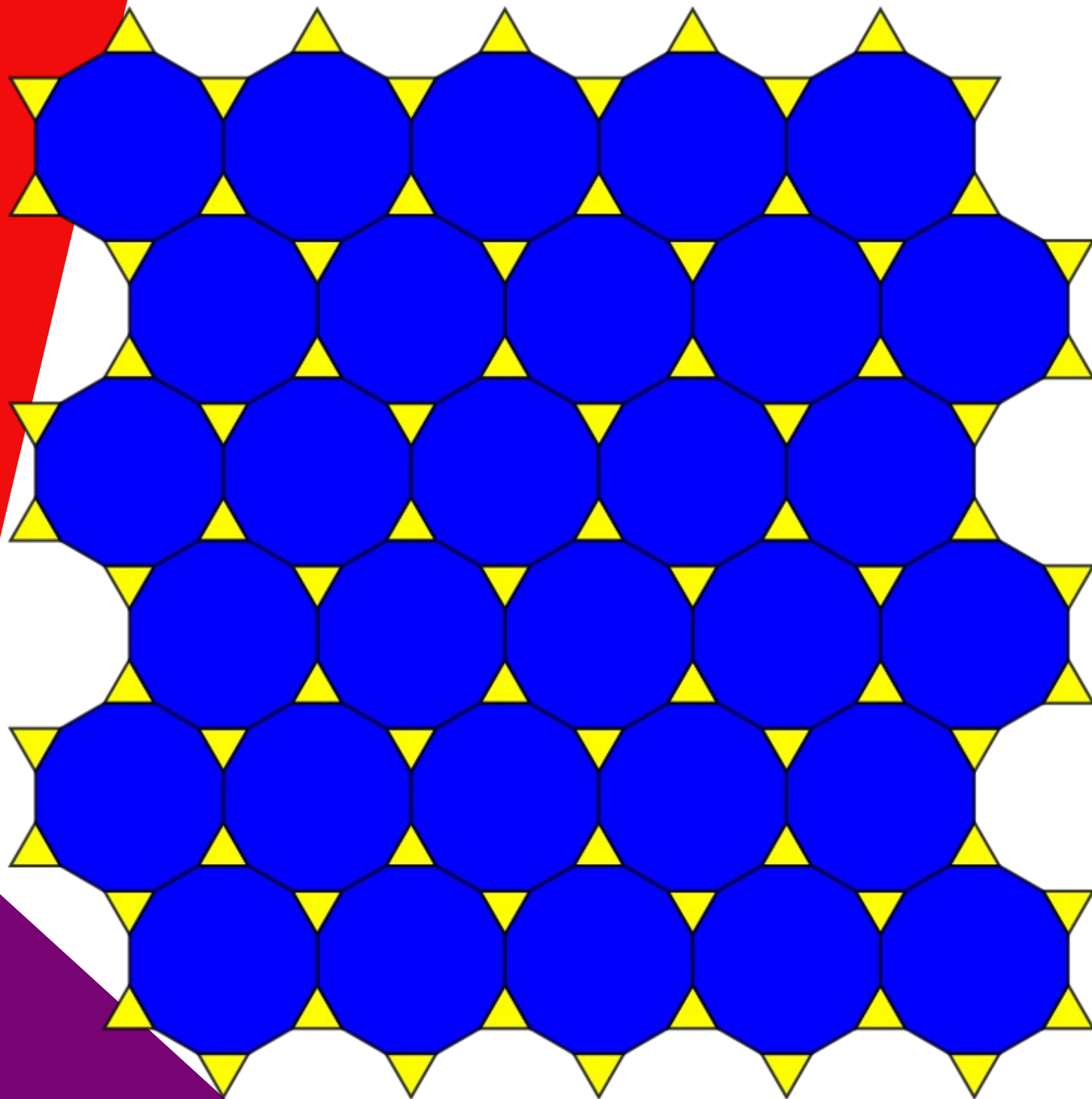
Ladrilhamentos com polígonos regulares

(2) Usando dois tipos de polígonos
(e mantendo a mesma distribuição de polígonos em cada vértice)









Ladrilhamentos com polígonos regulares

- (2.1) São apenas essas opções?
- (3) É possível fazer ladrilhos usando três tipos de polígonos?
- (4) É possível fazer ladrilhos usando quatro tipos de polígonos?

Referências

Wikipédia

https://en.wikipedia.org/wiki/Euclidean_tilings_by_convex_regular_polygons#Archimedean.2C_uniform_or_semi-regular_tilings

Site do Nrich

<https://nrich.maths.org/6069>

Matemateca da USP

<https://matemateca.ime.usp.br/acervo/ladrilhamentos.html>

Matemática Multimídia – M3: Experimento – Polígonos regulares e ladrilhos

<https://m3.ime.unicamp.br/recursos/1026>

Material Carmem Mathias no GeoGebra

<https://www.geogebra.org/m/uqemfkhp>

**Bom
divertimento!**

The background consists of several overlapping, irregularly shaped triangles in various colors: red, orange, yellow, green, blue, and purple. Each triangle is separated from the others by a thick white border, creating a dynamic and abstract composition.