

AMA花磚對稱P4圖設計

勾股收納之STEAM教學

From: 山中藝科數



二維對稱造形P4

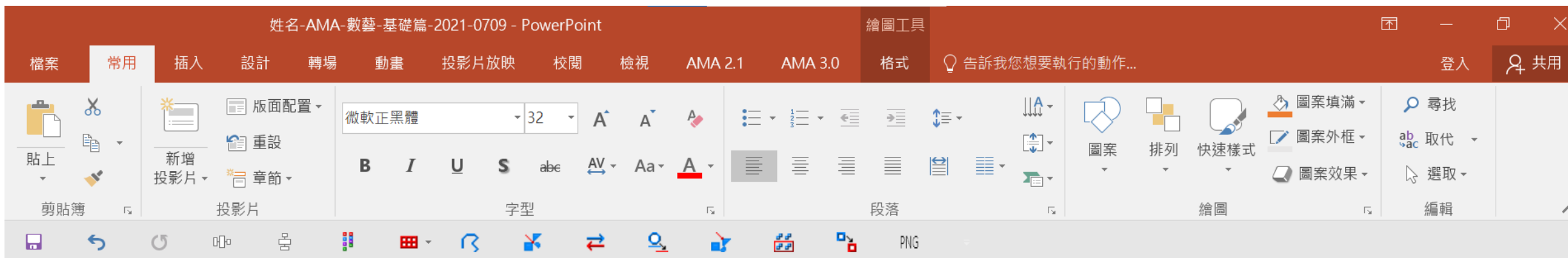
快捷鍵

左手按Ctrl不放 右手滑鼠拉出即複製

左手按Shift不放 右手滑鼠可連續點選
(而且點選的第一個為基準子)



一般PPT工具列



AMA 3.0 工具列



AMA指令編碼

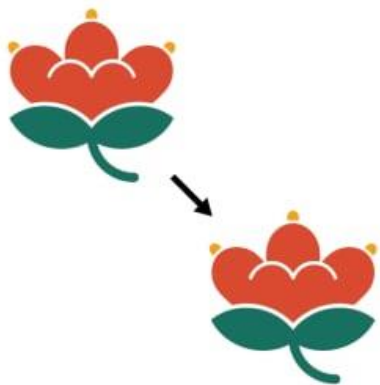
- a.輔助 > 1.快捷 >> 2.快捷鍵
- a.輔助 > 3.指令編碼





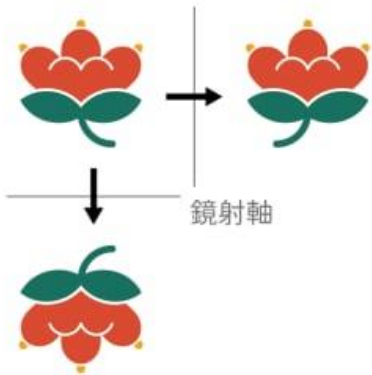
AMA花磚對稱P4圖設計 AMA基礎篇

A 平移



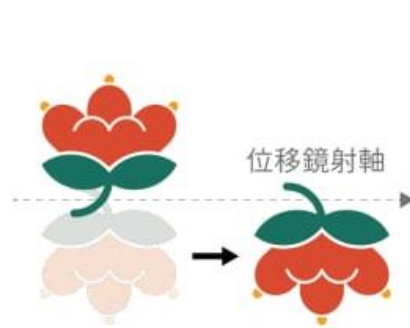
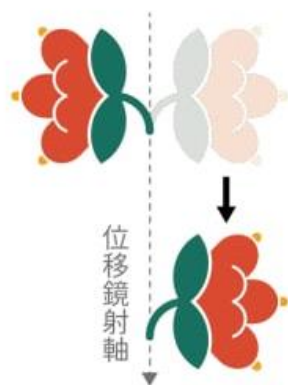
把圖樣直接平行移動到另一個地方，不限於平行移動的方向。

B 鏡射



將圖樣沿著鏡射軸翻轉的操作方式，就像映照在鏡子裡的樣態。

D 位移鏡射



先將圖樣平移之後，再對某條鏡射軸進行鏡射，結合了兩種對稱型式，讓圖樣的變化性更大。

C 旋轉

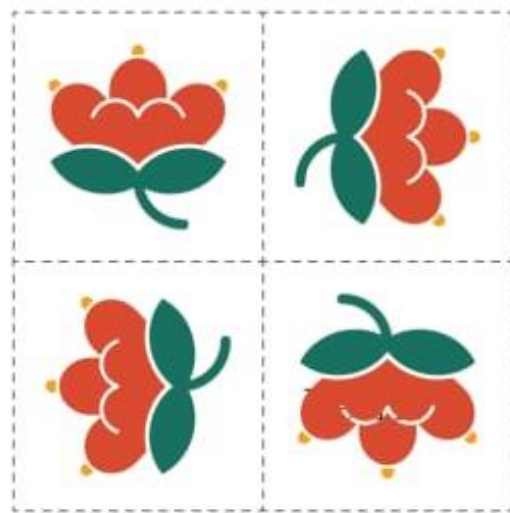
3次分割旋轉



4次分割旋轉



4次分割旋轉為正方形格子

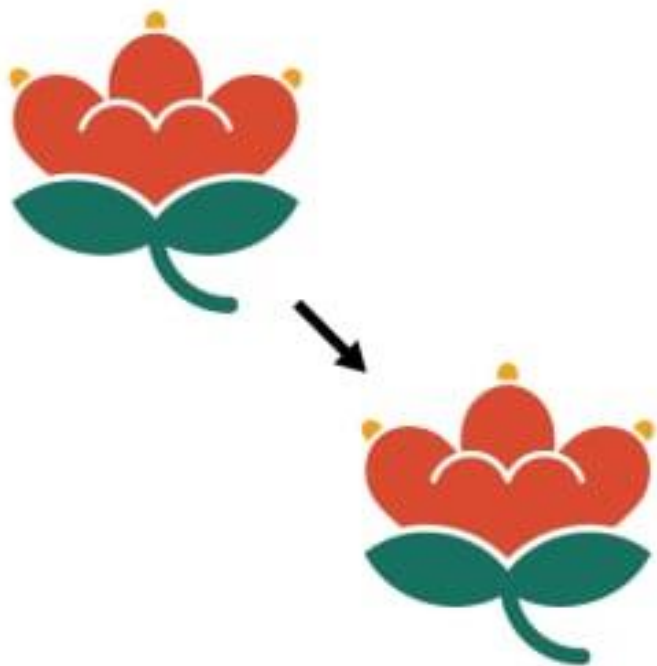


以某個點作為旋轉中心，對圖樣進行旋轉，重複性裝飾圖樣的旋轉角度則以這四種角度為主：180°、120°、90°、60°；也可以想像成將圓分成不同等分，可分別用2次分割 (p2)、3次分割 (p3)、4次分割 (p4)、6次分割 (p6) 表示，本文的花磚圖案則是以4次分割為主。

A 平移

示範區

A
—
平
移



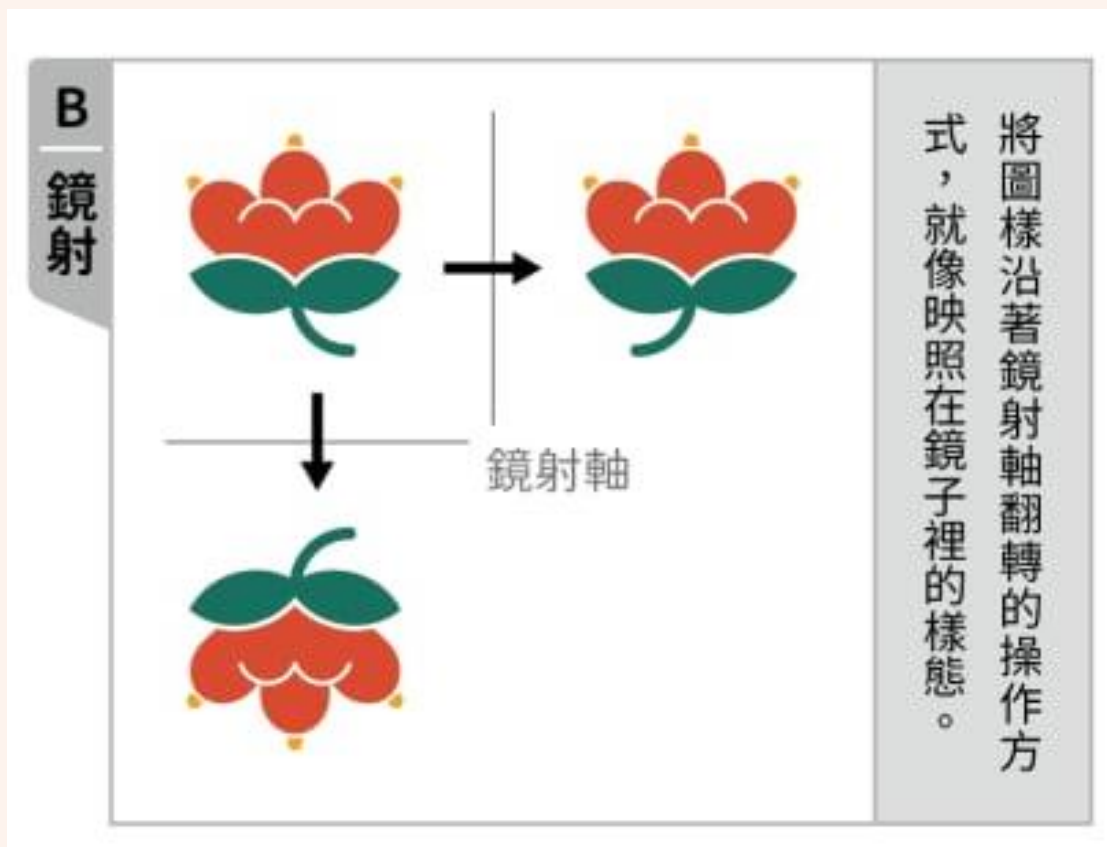
把圖樣直接平行移動到另一個地方，不限於平行移動的方向。

練習區

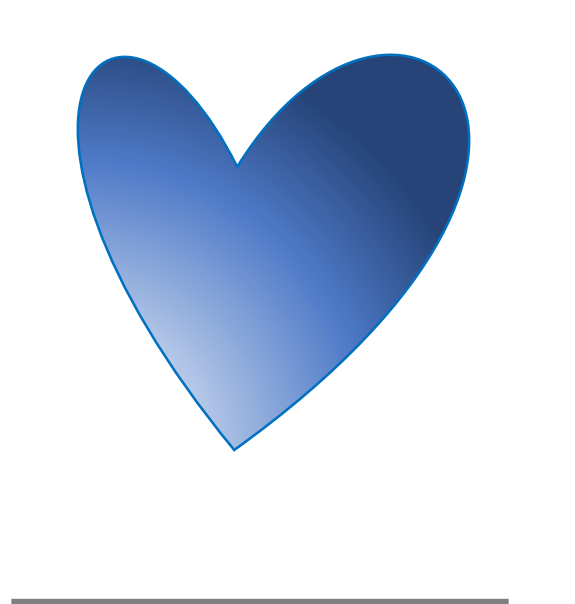


B 鏡射

示範區

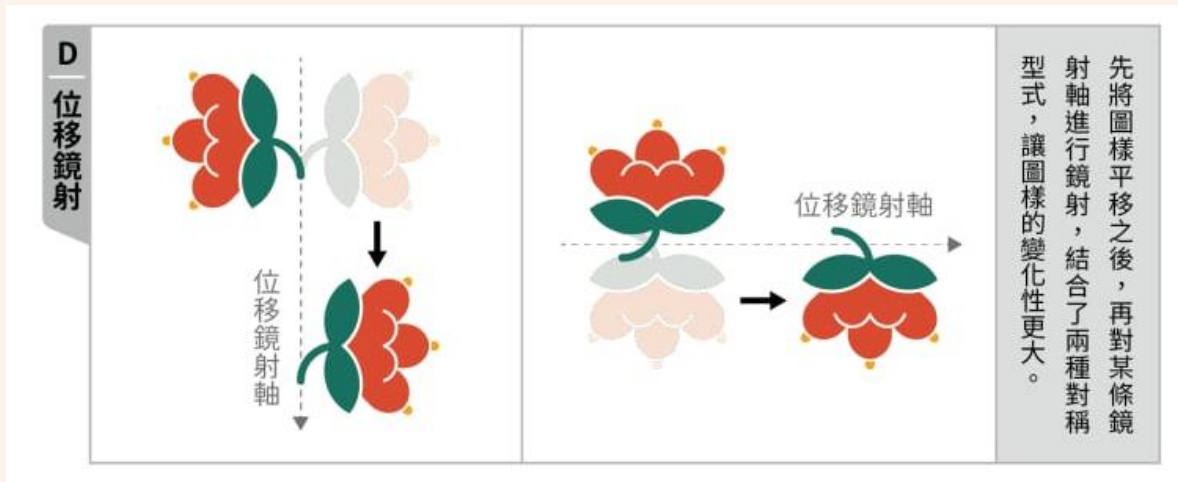


練習區

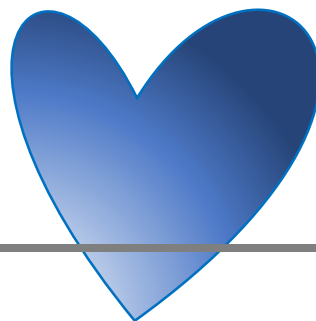


D 位移鏡射

示範區



練習區



C 旋轉

C
旋轉

3次分割旋轉



4次分割旋轉



4次分割旋轉為正方形格子



以某個點作為旋轉中心，對圖樣進行旋轉，重複性裝飾圖樣的旋轉角度則以這四種角度為主： 180° 、 120° 、 90° 、 60° ；也可以想像成將圓分成不同等分，可分別用2次分割（p2）、3次分割（p3）、4次分割（p4）、6次分割（p6）表示，本文的花磚圖案則是以4次分割為主。

C 旋轉：說明

以某一點作為旋轉中心，對圖樣進行旋轉，
但是重複性裝飾圖樣的旋轉角度，
限定為： 180° 、 120° 、 90° 、 60°

若將圓的 360° 以幾次分割的方式解說，則

$180^\circ \rightarrow$ 2次分割：P2

$120^\circ \rightarrow$ 3次分割：P3

$90^\circ \rightarrow$ 4次分割：P4

$60^\circ \rightarrow$ 6次分割：P6

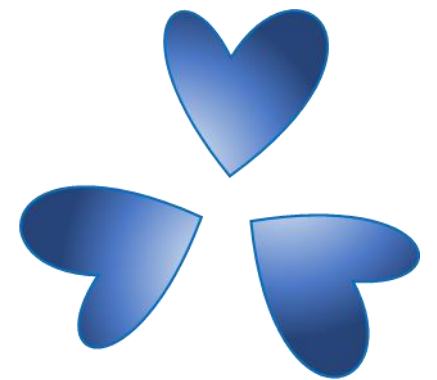
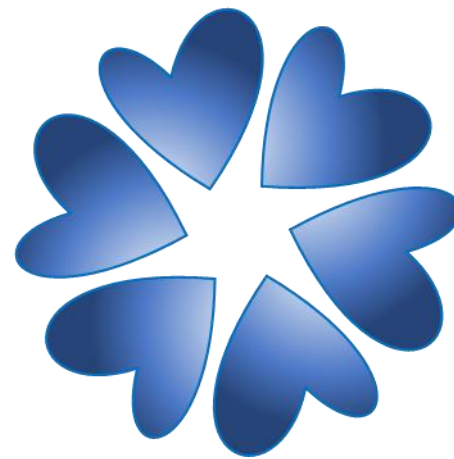
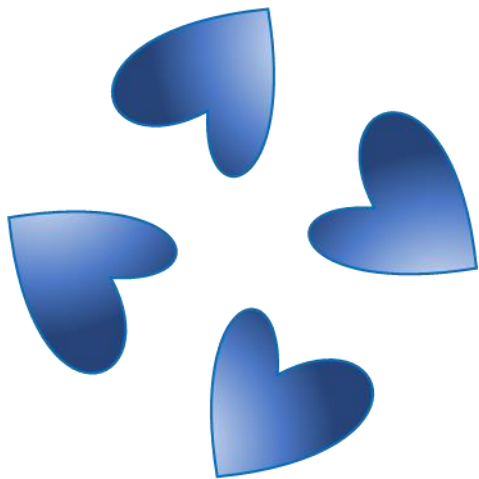
拖拉下列圖案到正確對應的名稱

P2

P3

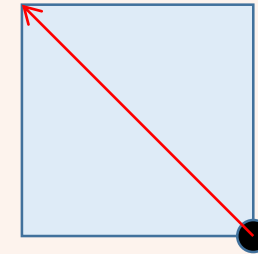
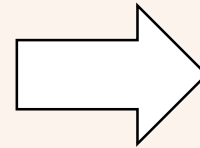
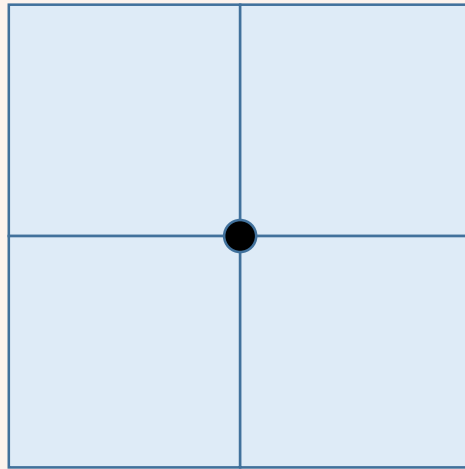
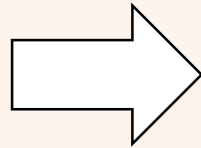
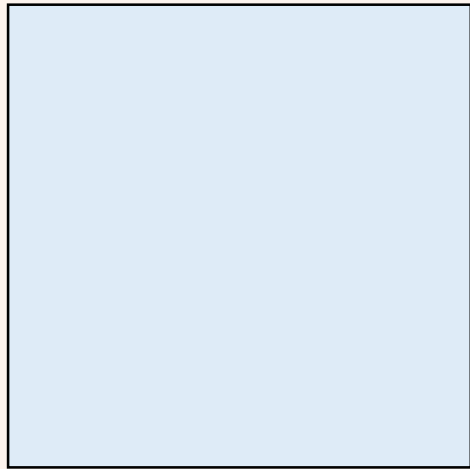
P4

P6

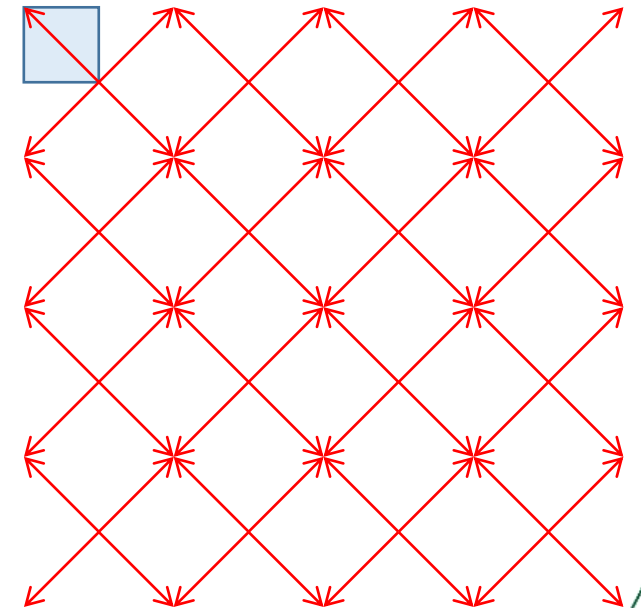
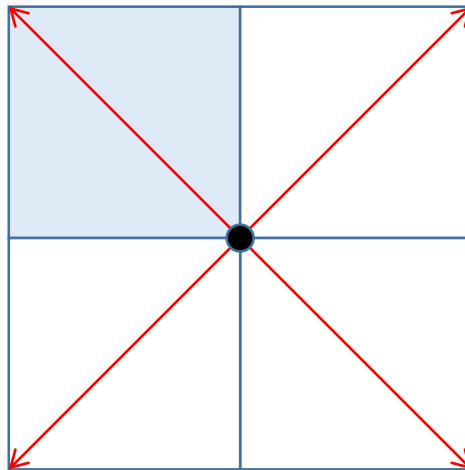
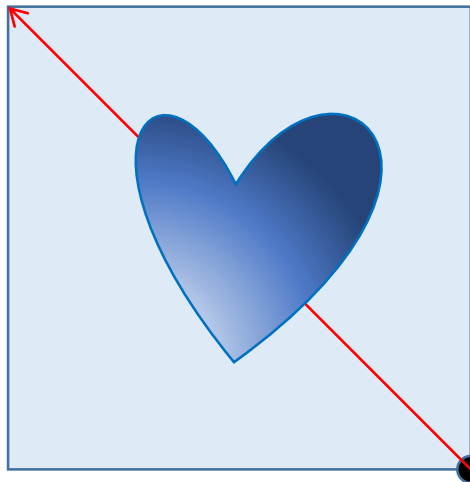


P4系列繪圖

示範區

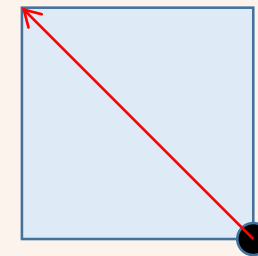
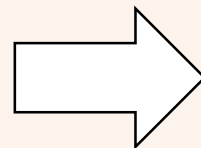
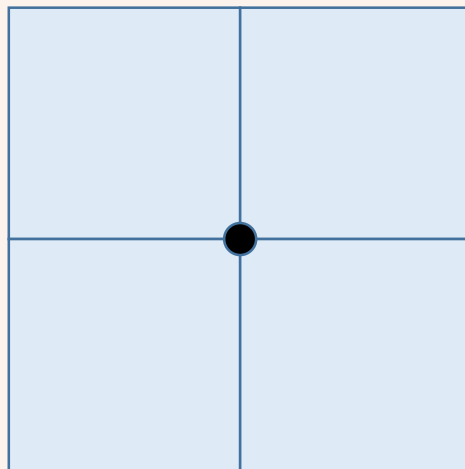
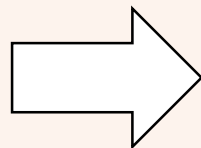
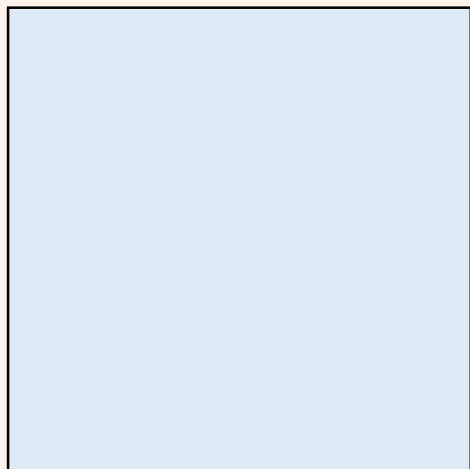


練習區

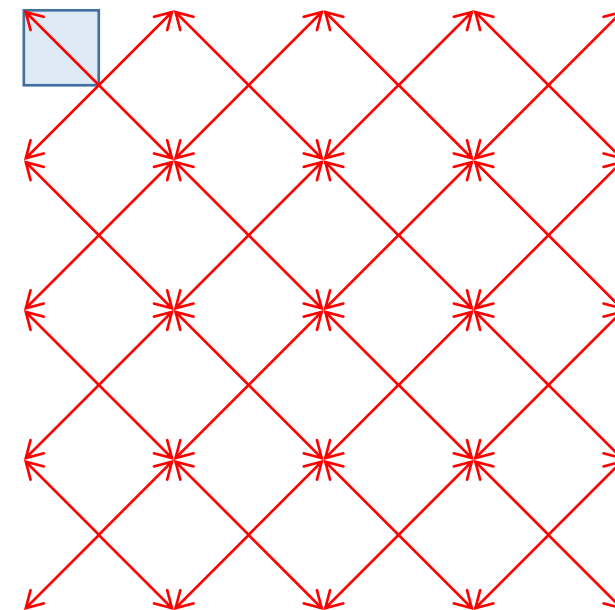
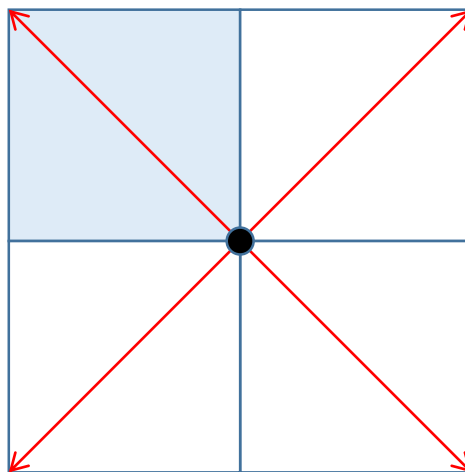
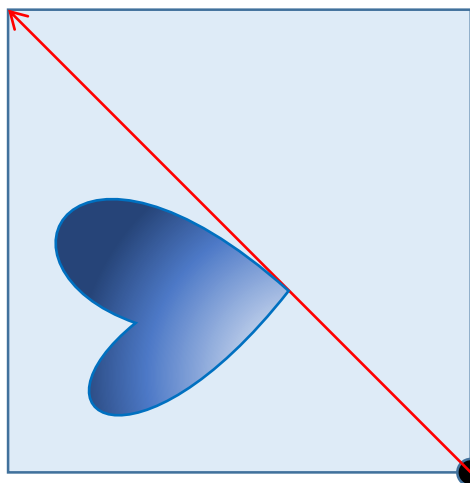


P4系列繪圖

示範區



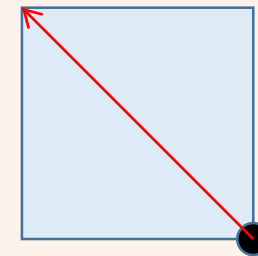
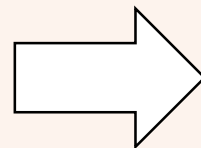
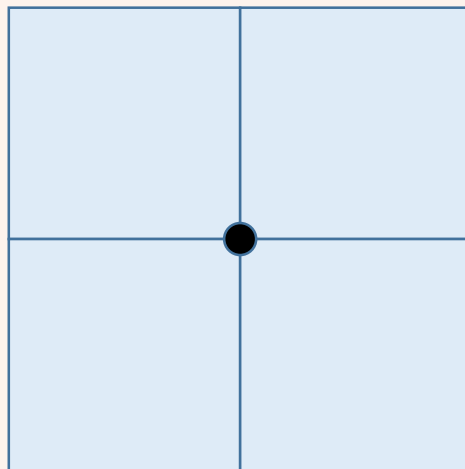
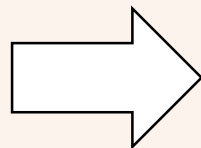
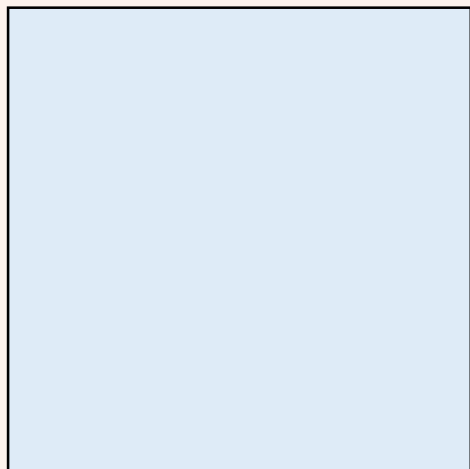
練習區



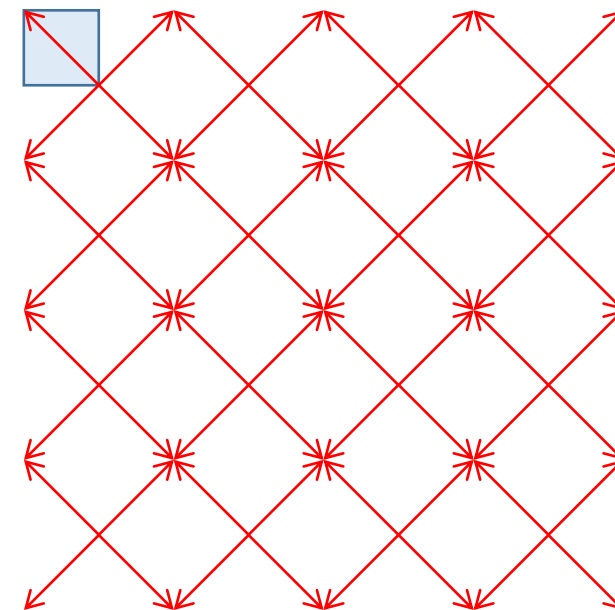
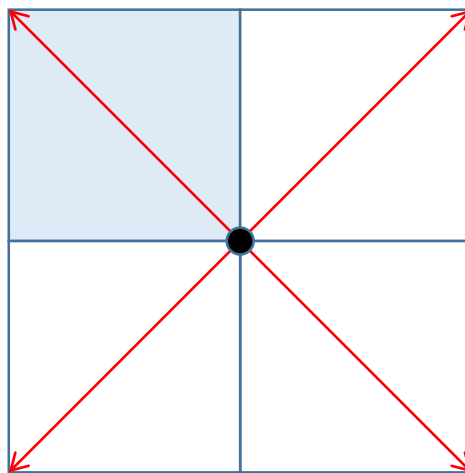
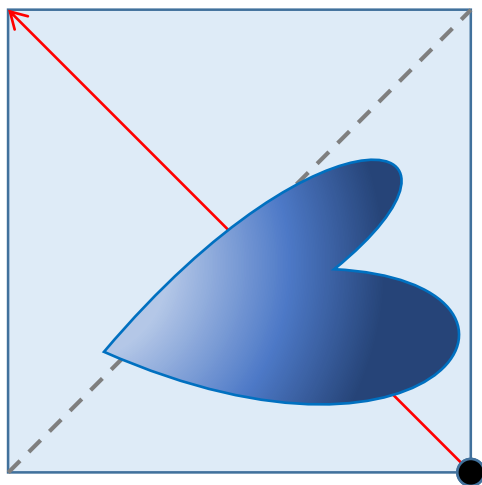
用基準線對稱後再P4→p4m

P4系列繪圖

示範區



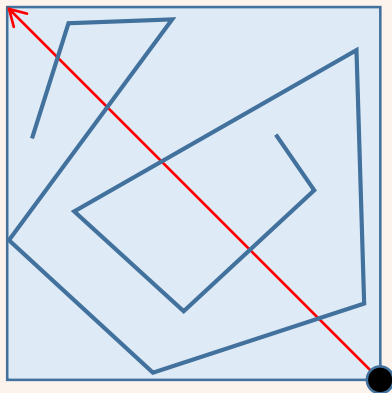
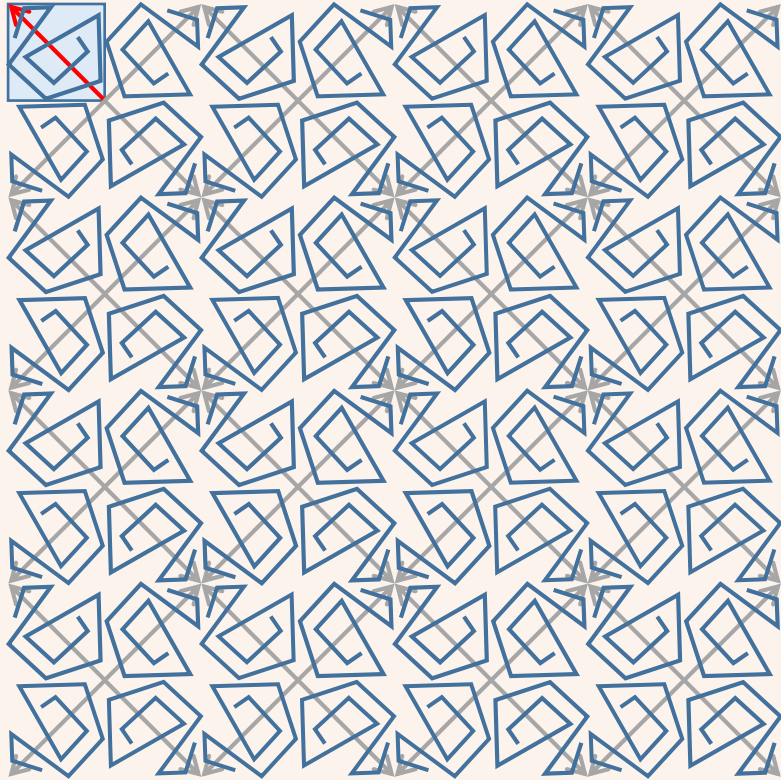
練習區



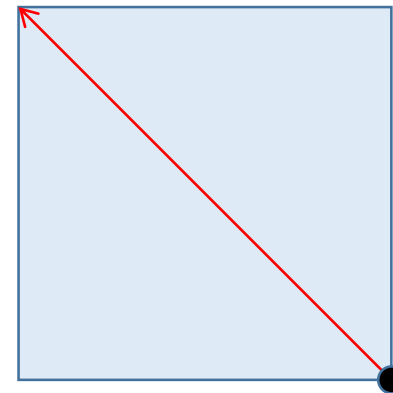
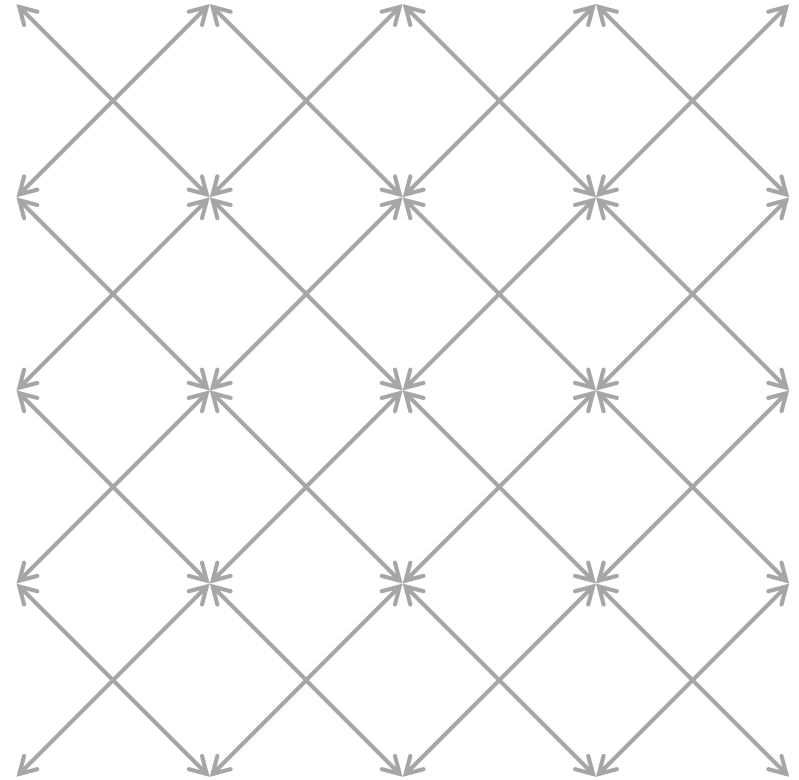
用另一對角線對稱後再P4→p4g

P4練習(1)任意多邊形

示範區

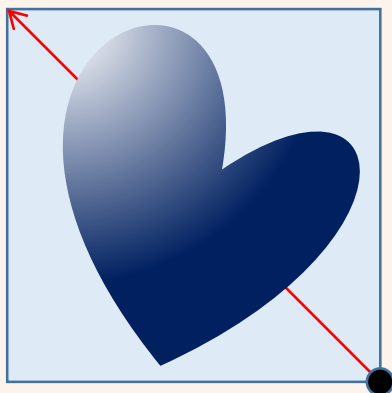
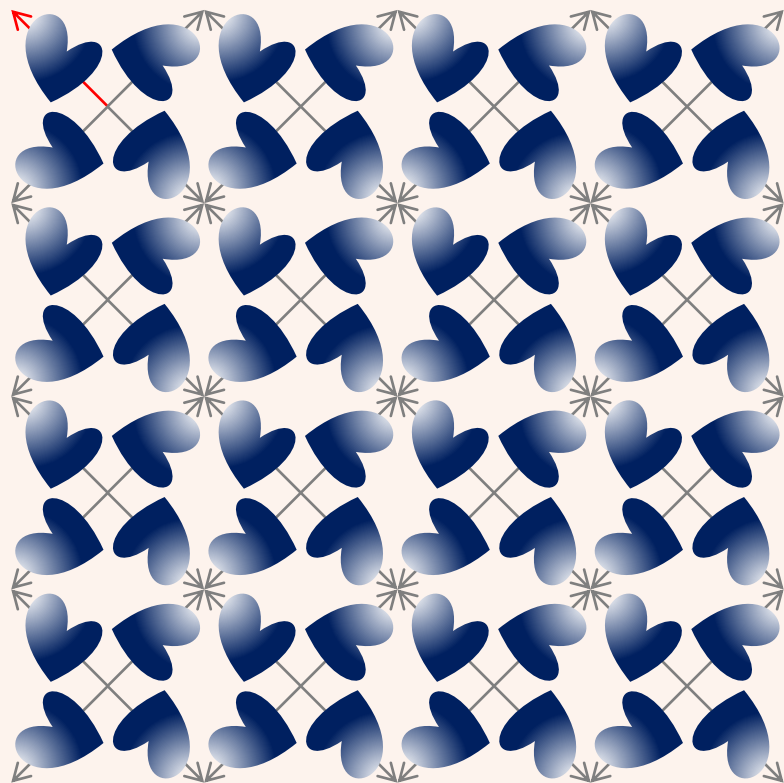


練習區

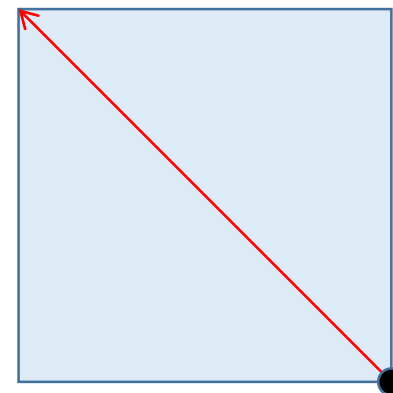
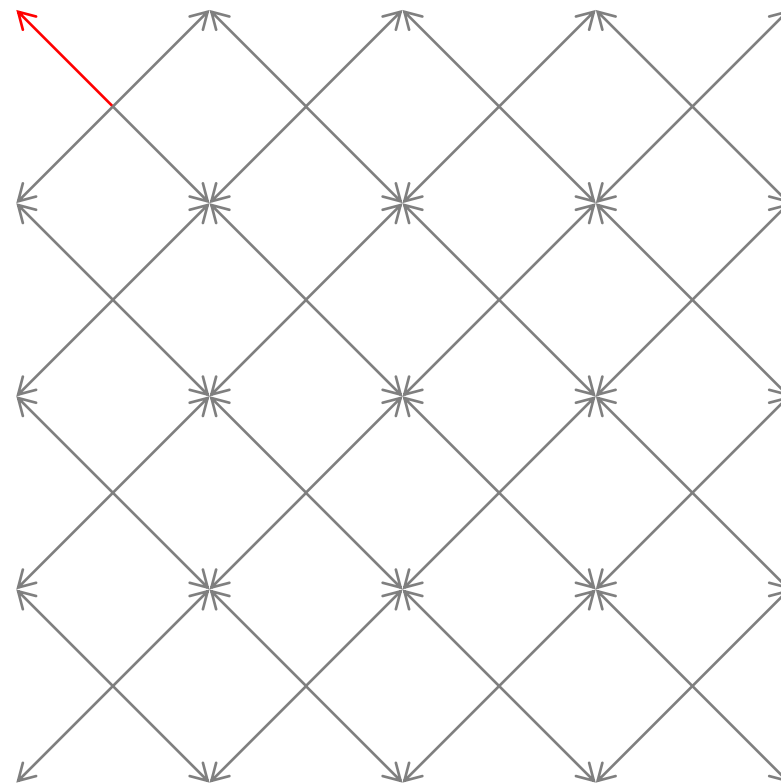


P4練習(2)愛心

示範區

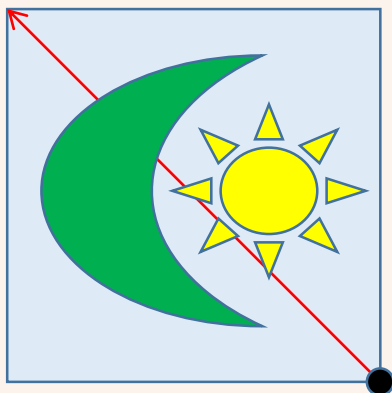


練習區

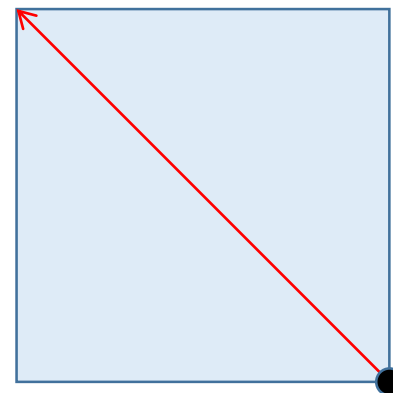
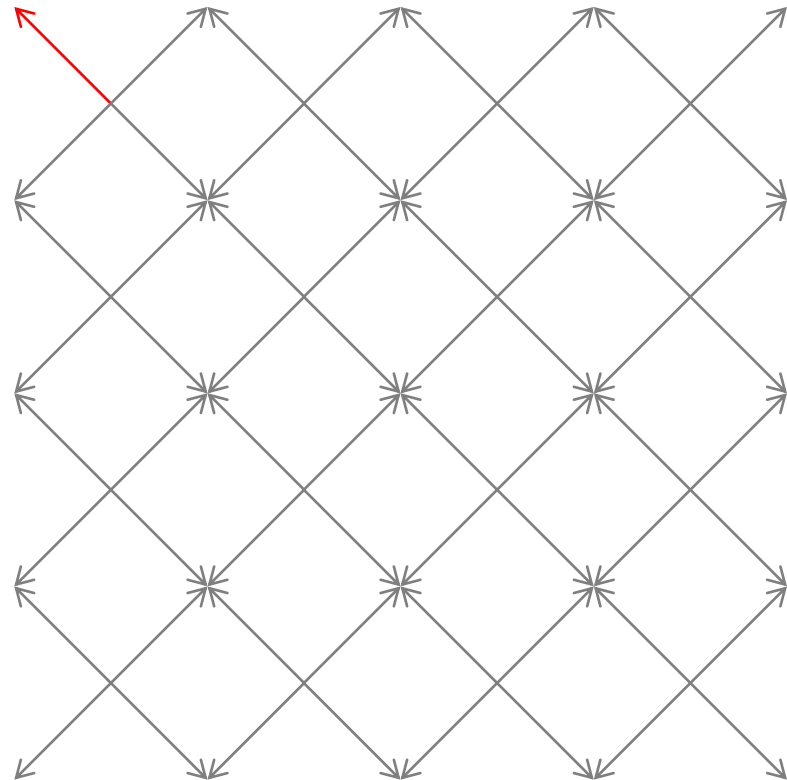


P4練習(3)多物件-月亮太陽

示範區

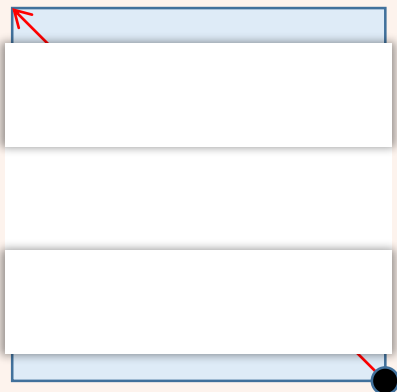
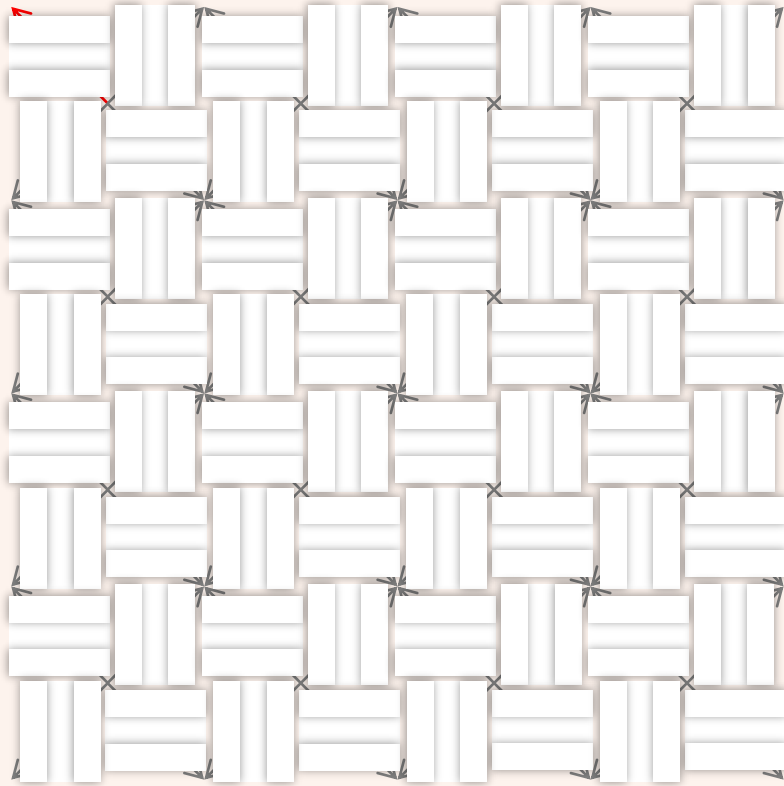


練習區



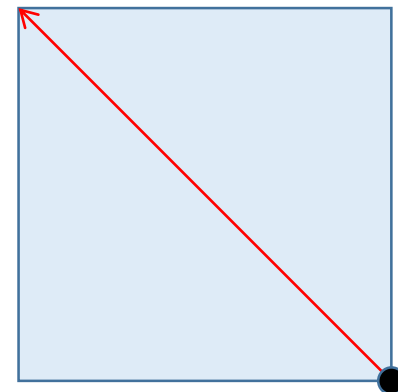
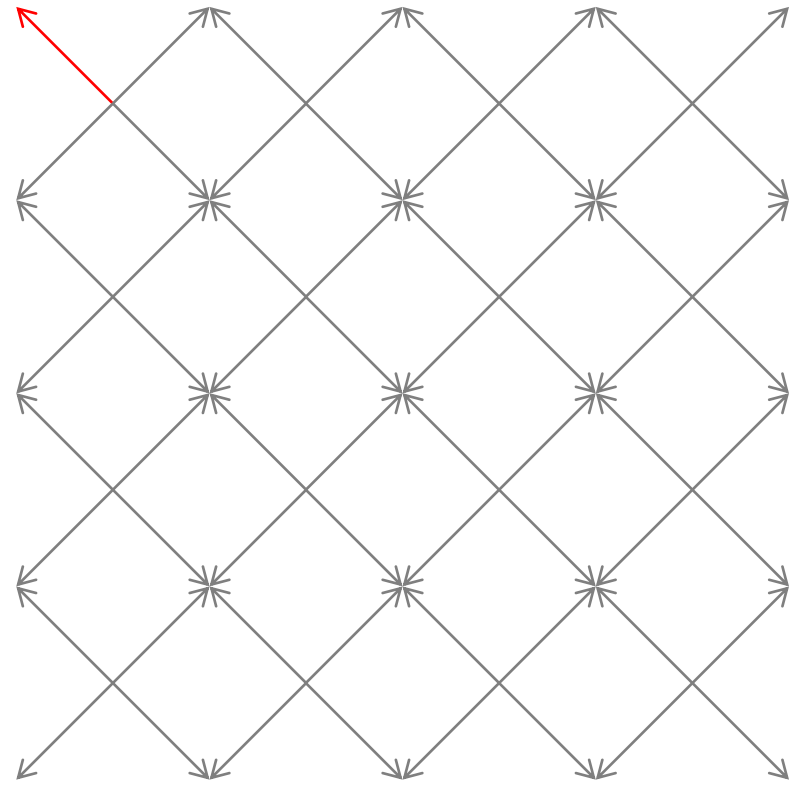
P4練習(4)多物件-編織

示範區



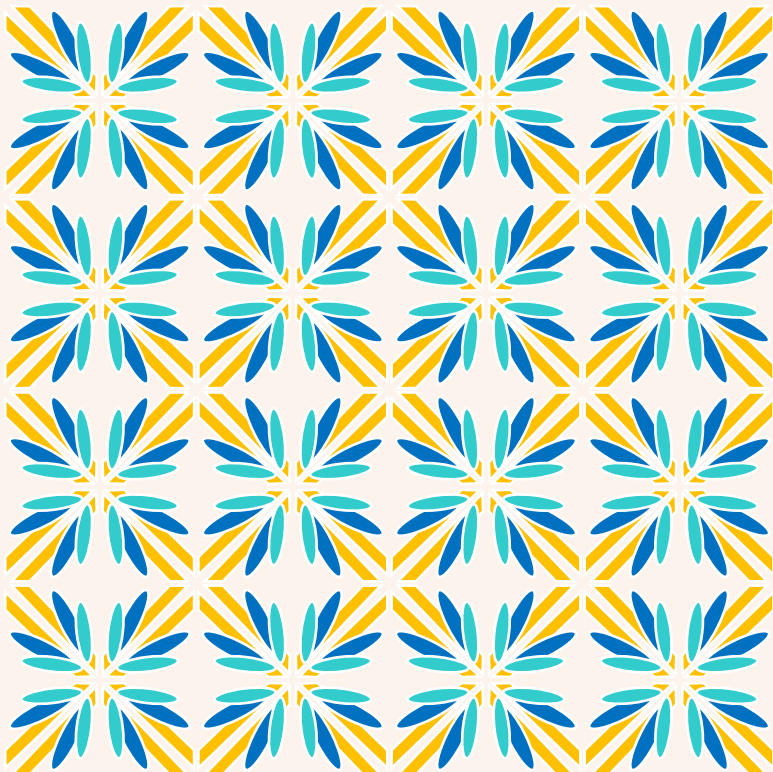
塗顏色、無外框
其中兩個上陰影且移到最上層且群組

練習區



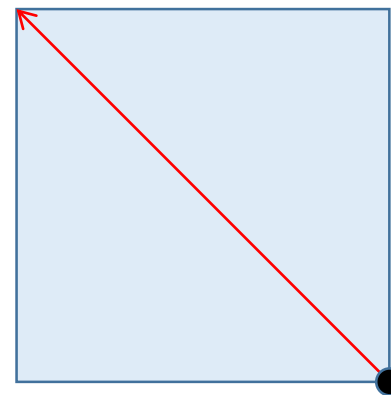
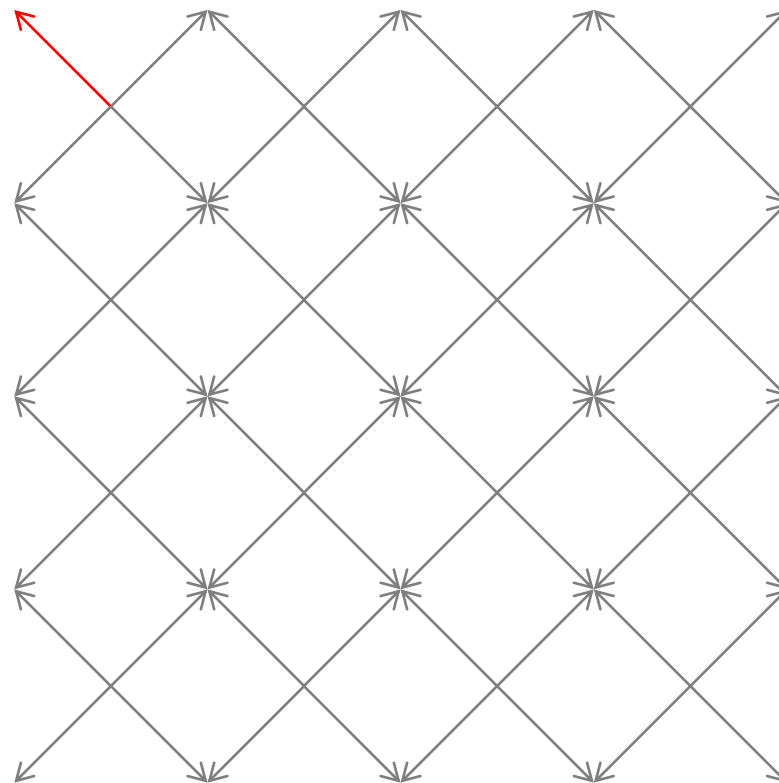
P4m練習-多邊形

示範區



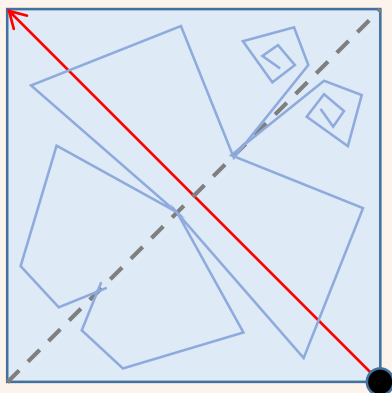
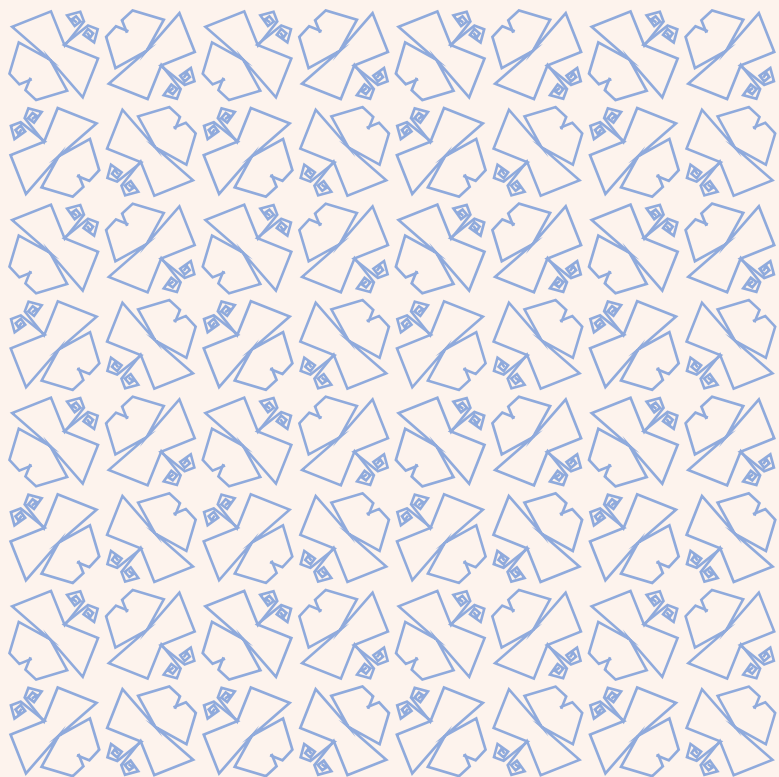
用基準線對稱後再P4

練習區

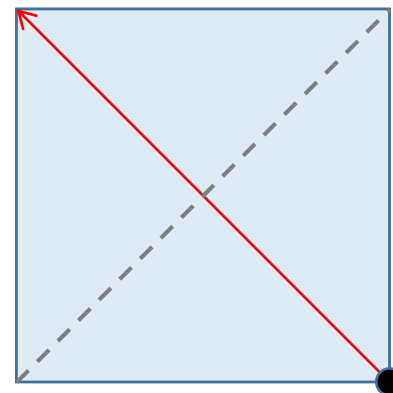


P4g練習-多邊形

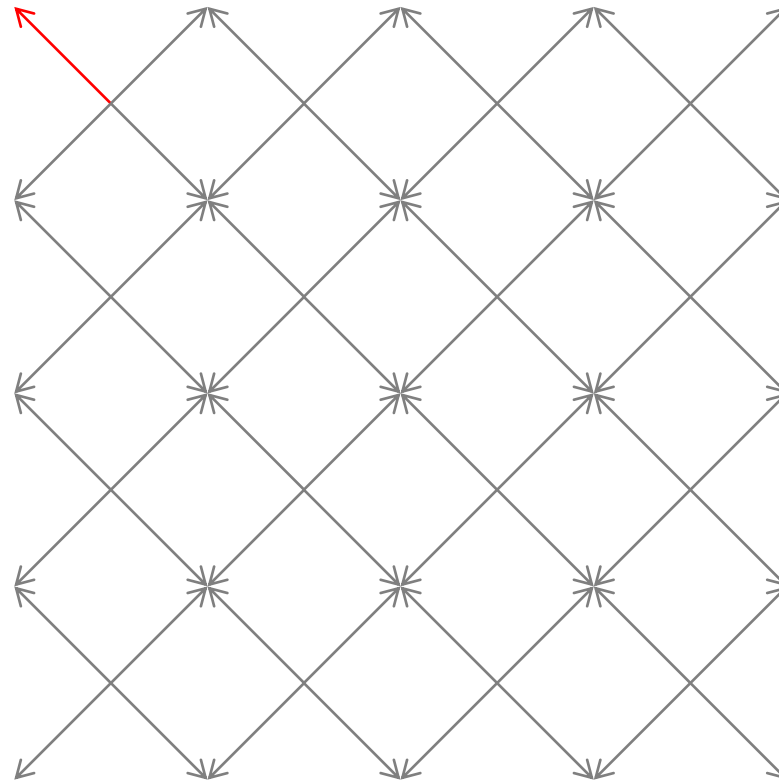
示範區

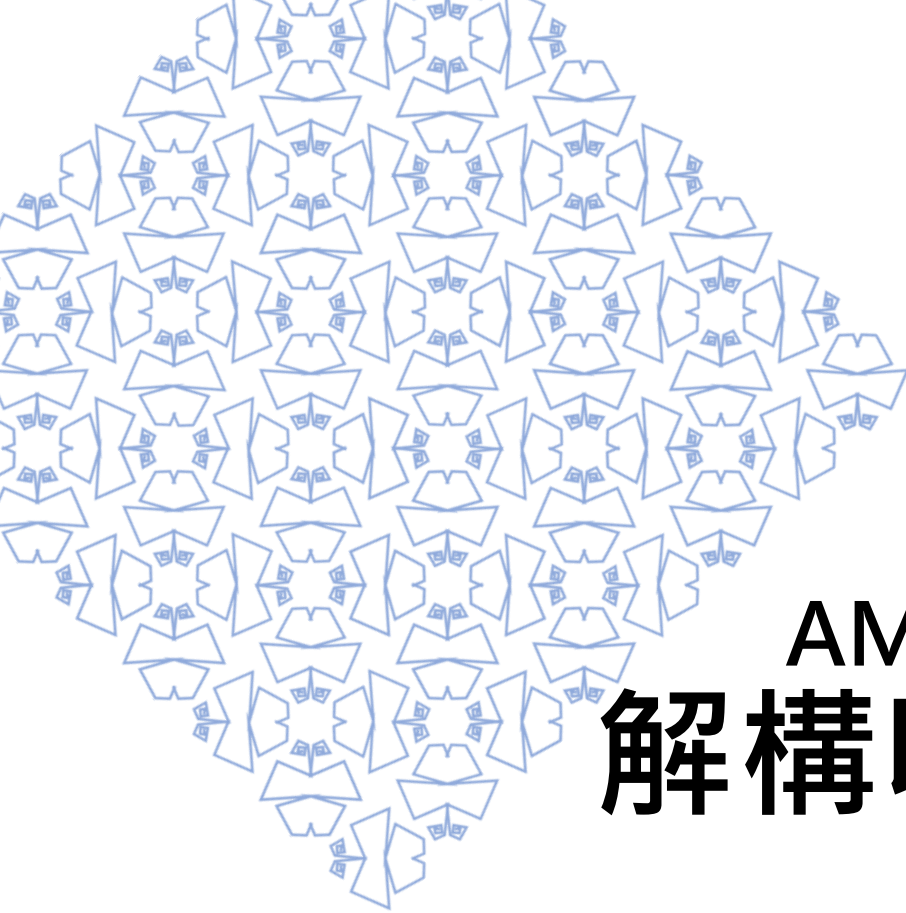


用另一對角線對稱後再P4

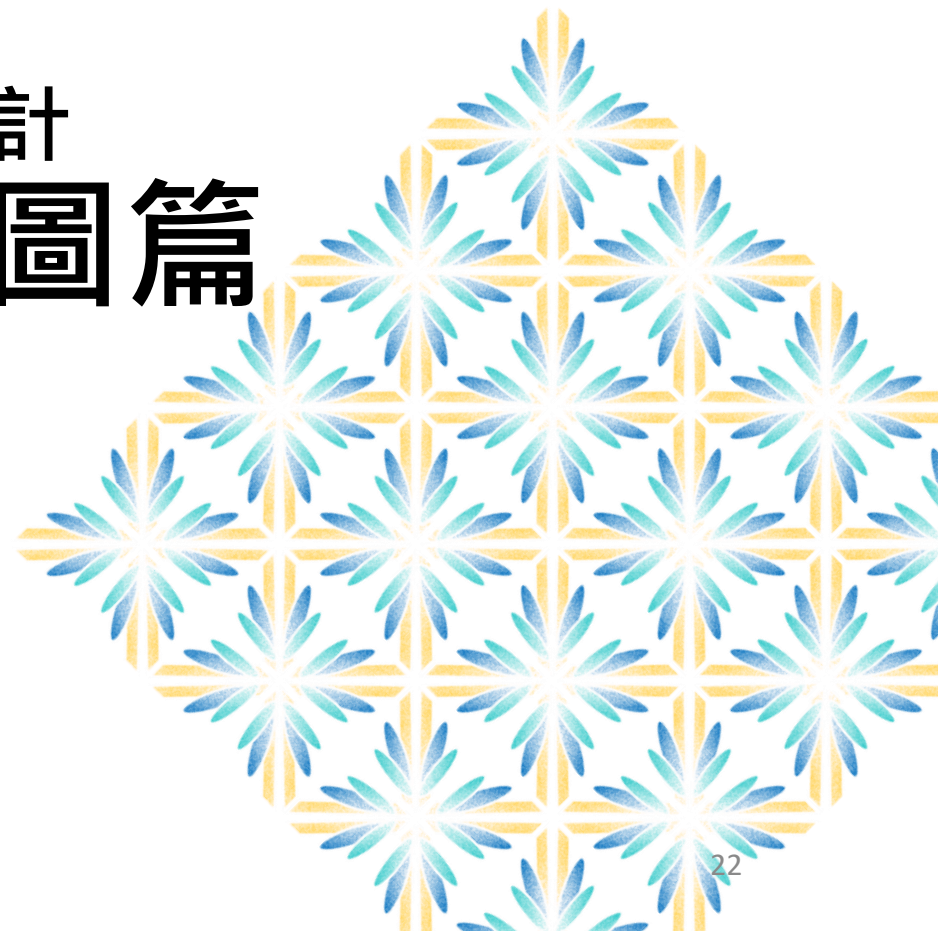


練習區

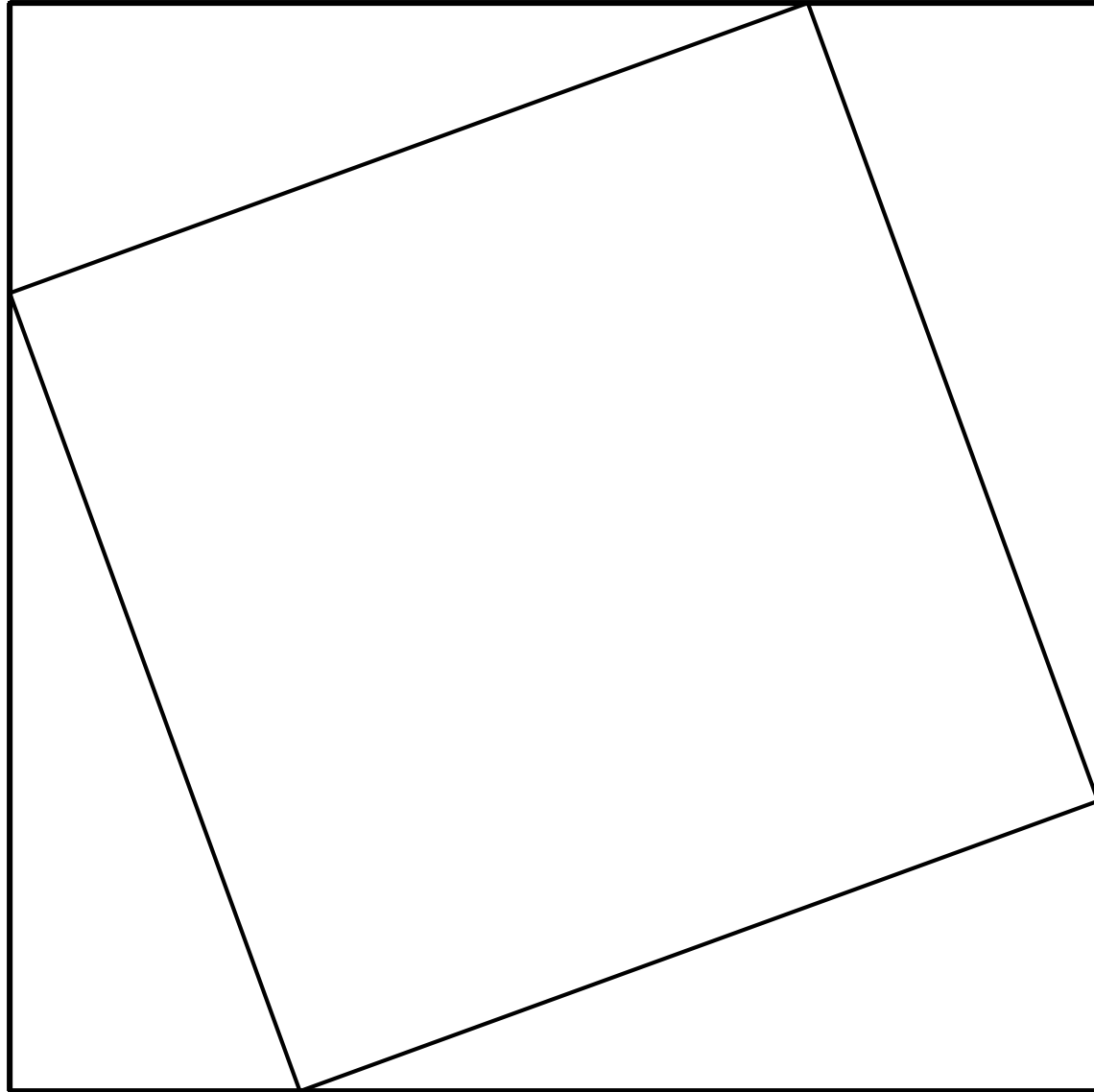




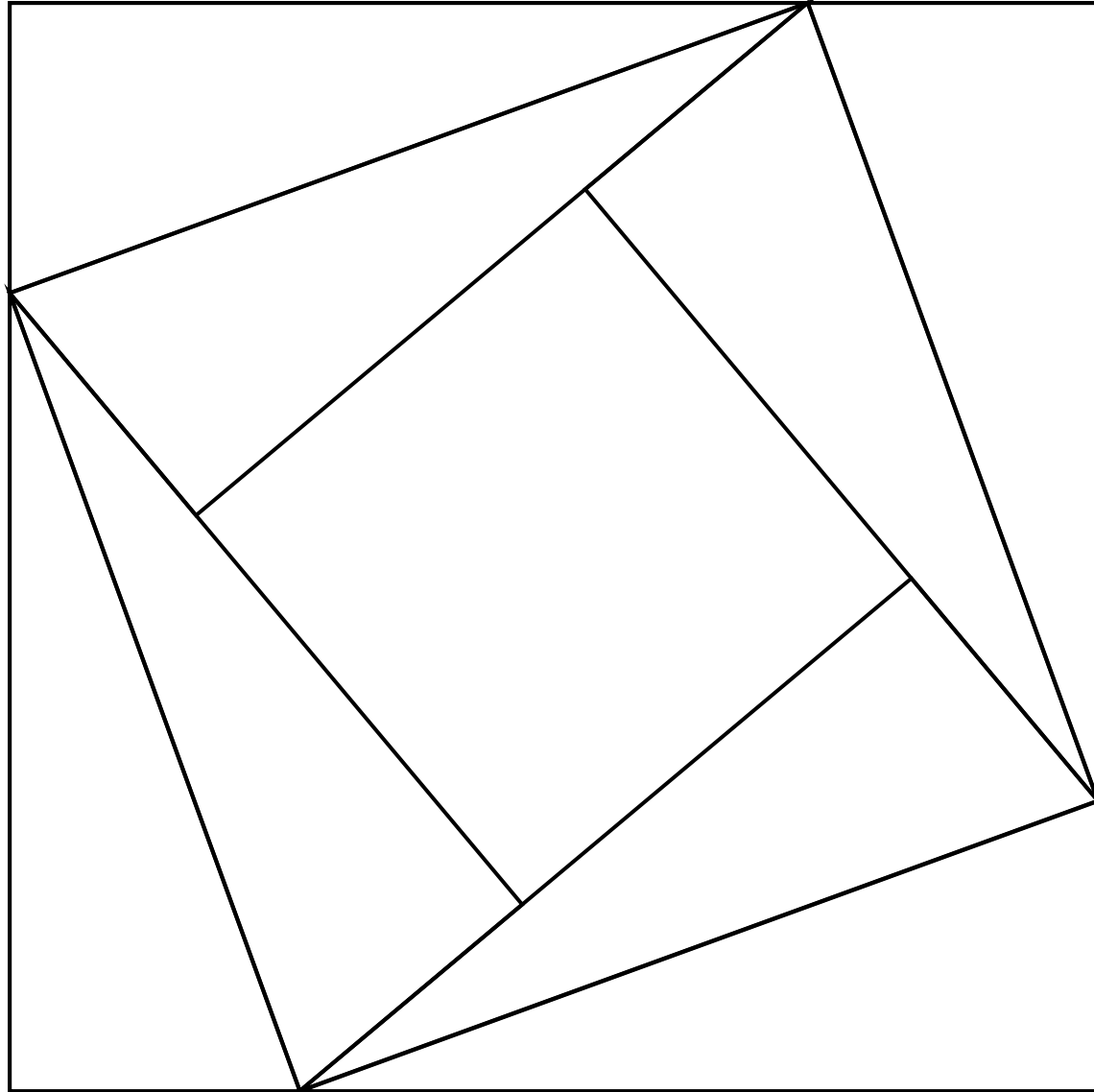
AMA花磚對稱P4圖設計 解構收納盒摺序圖篇



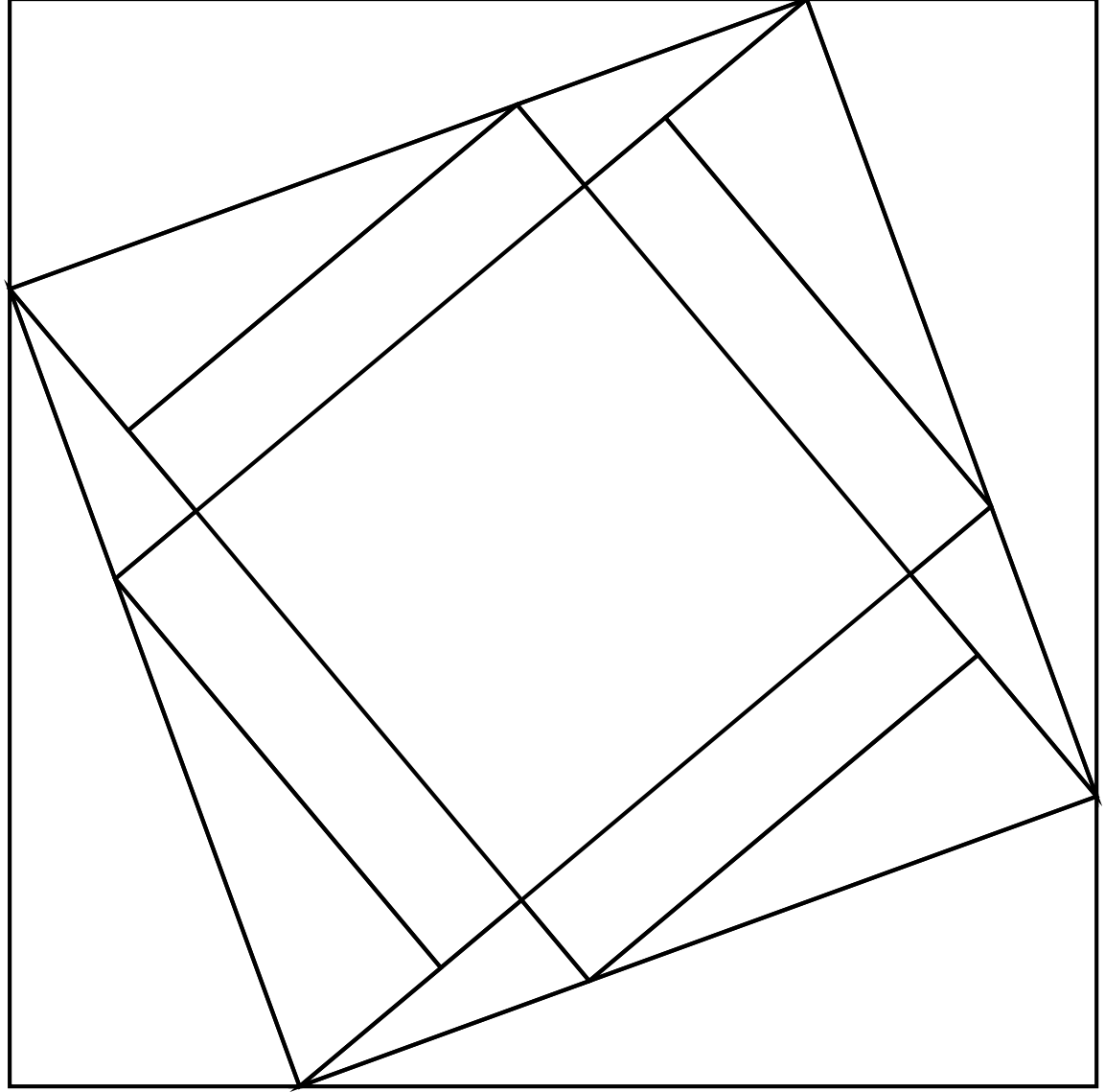
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姓名：_____



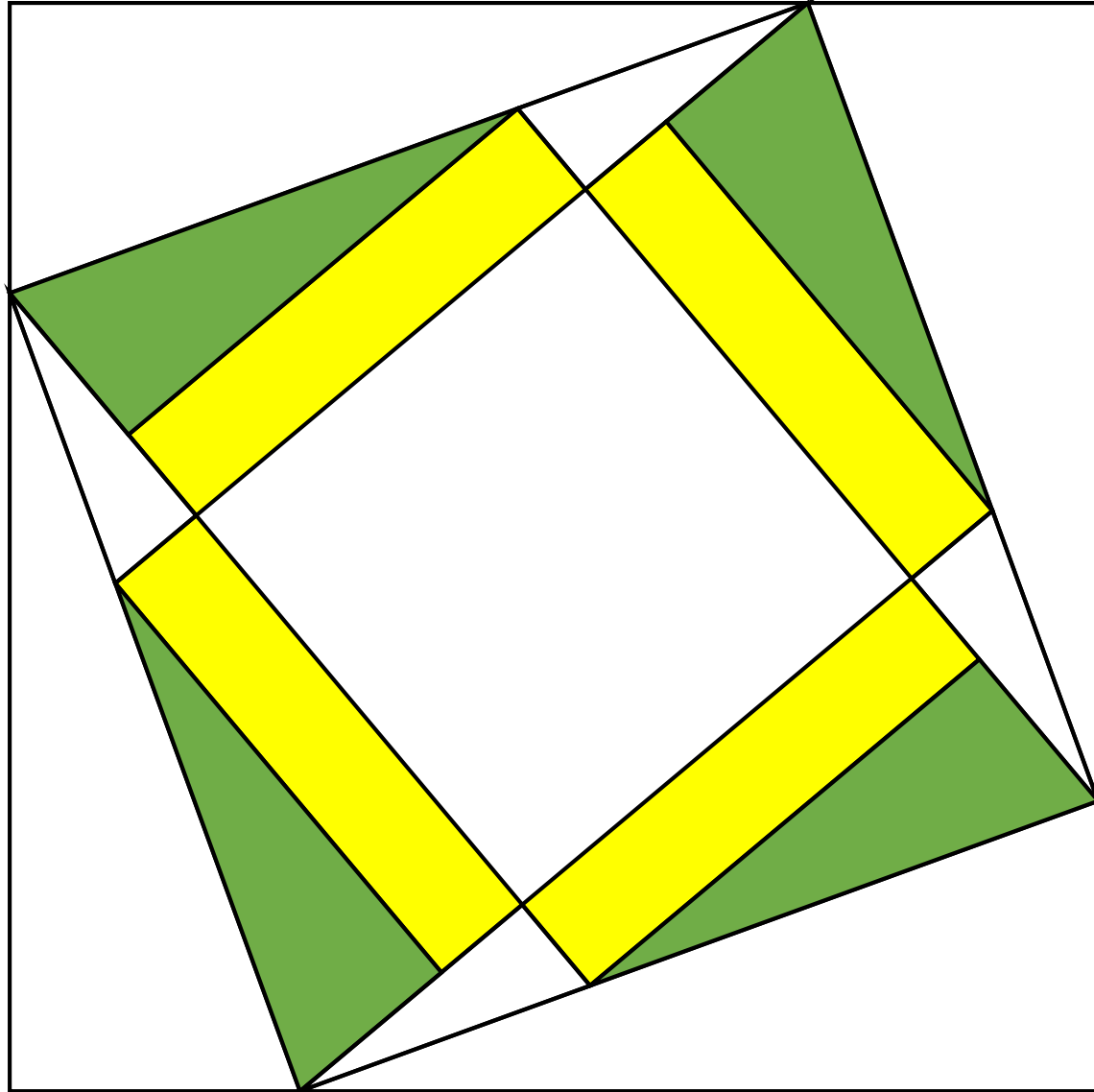
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姓名：_____



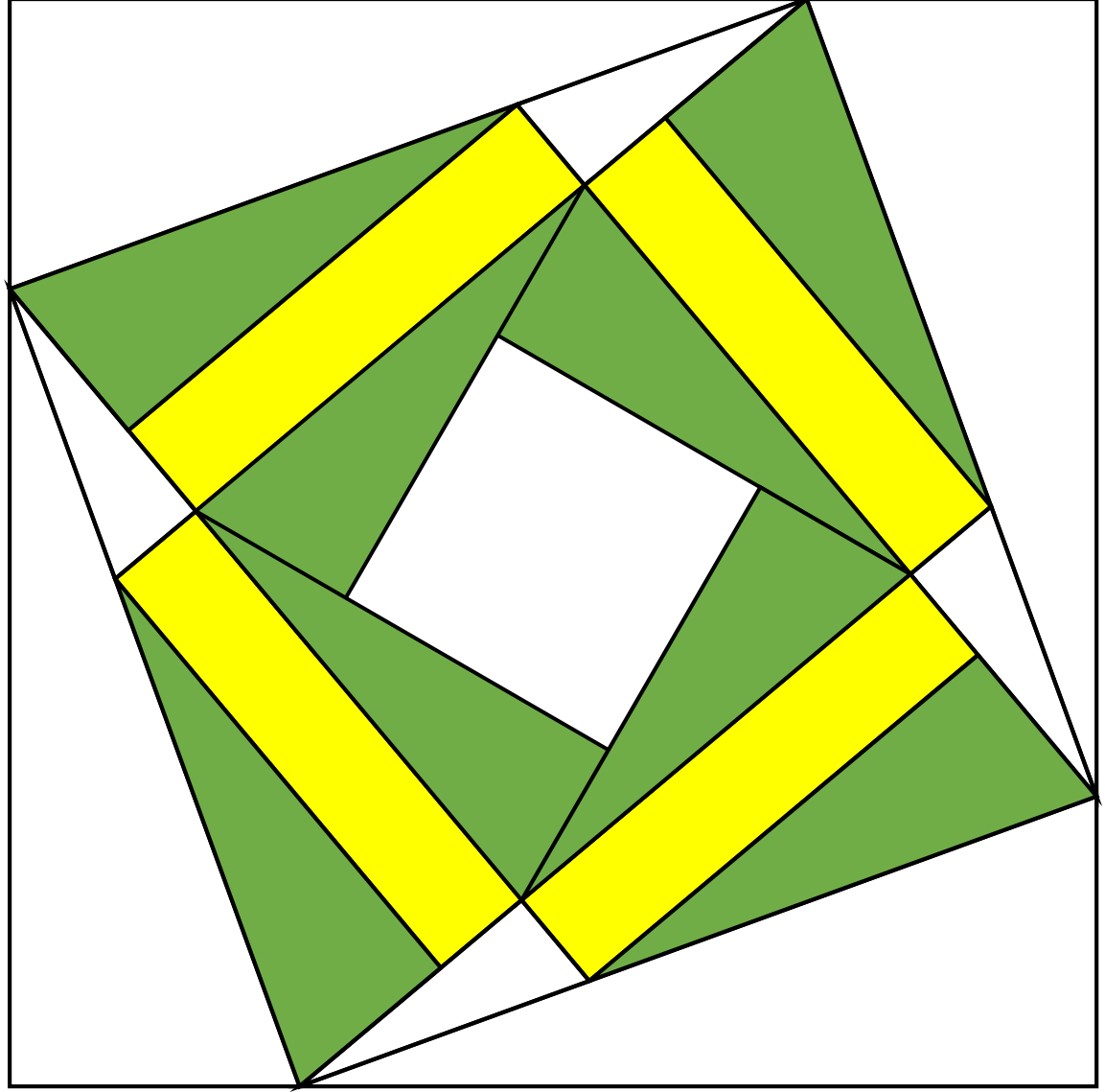
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姓名：_____



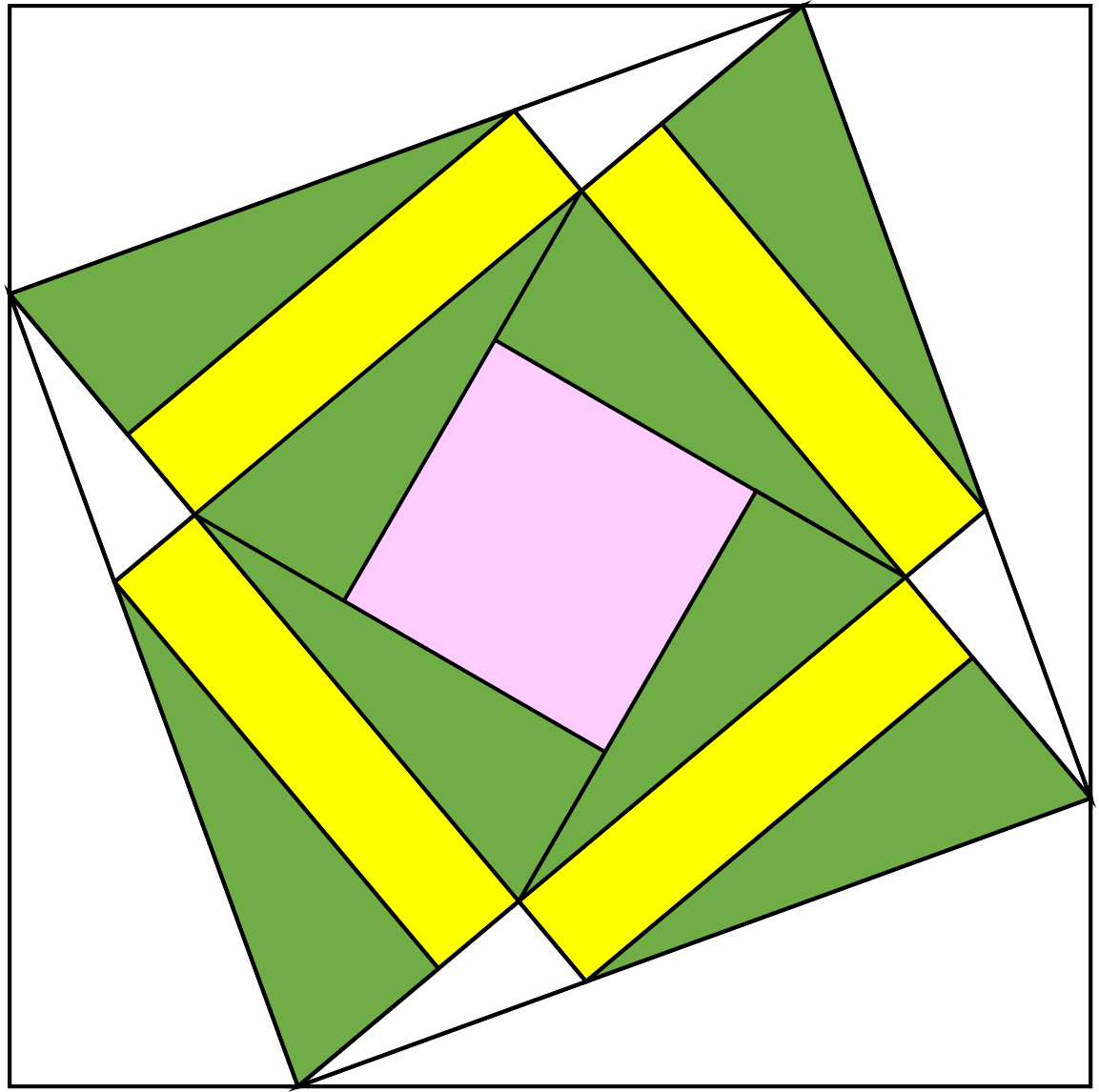
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姓名：_____



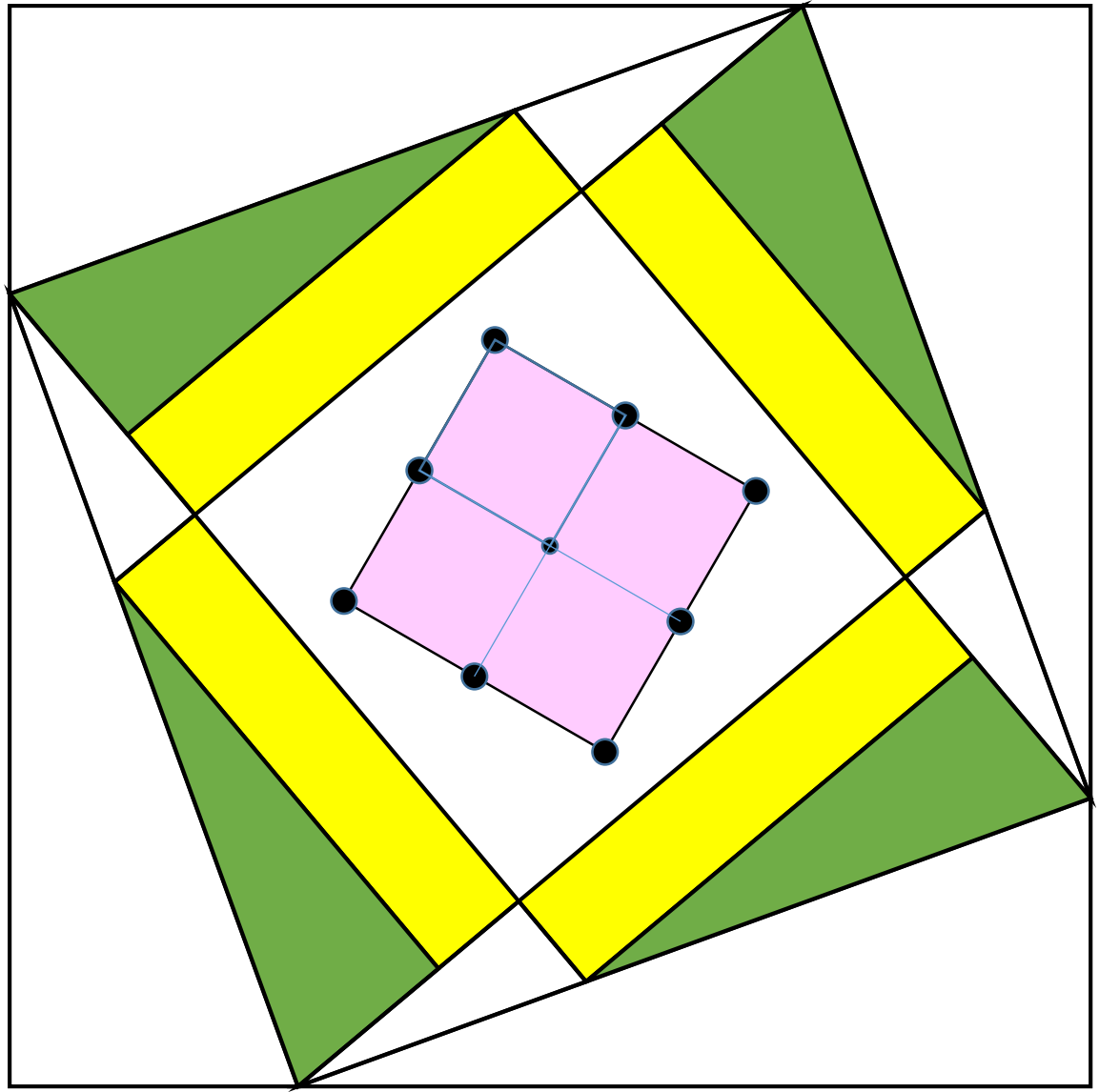
班級：_____ 座號：_____
姓名：_____



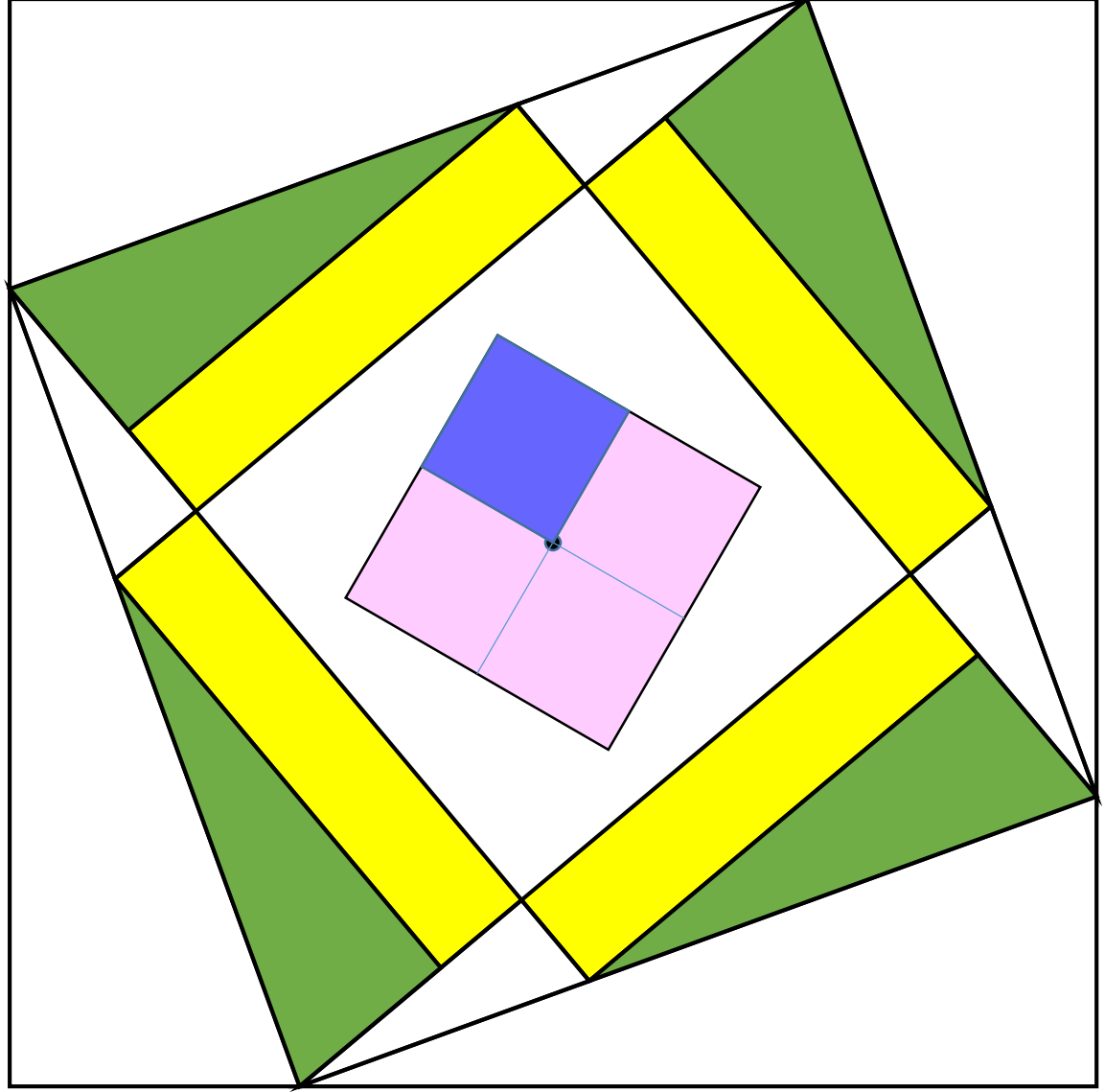
班級：_____ 座號：_____
姓名：_____



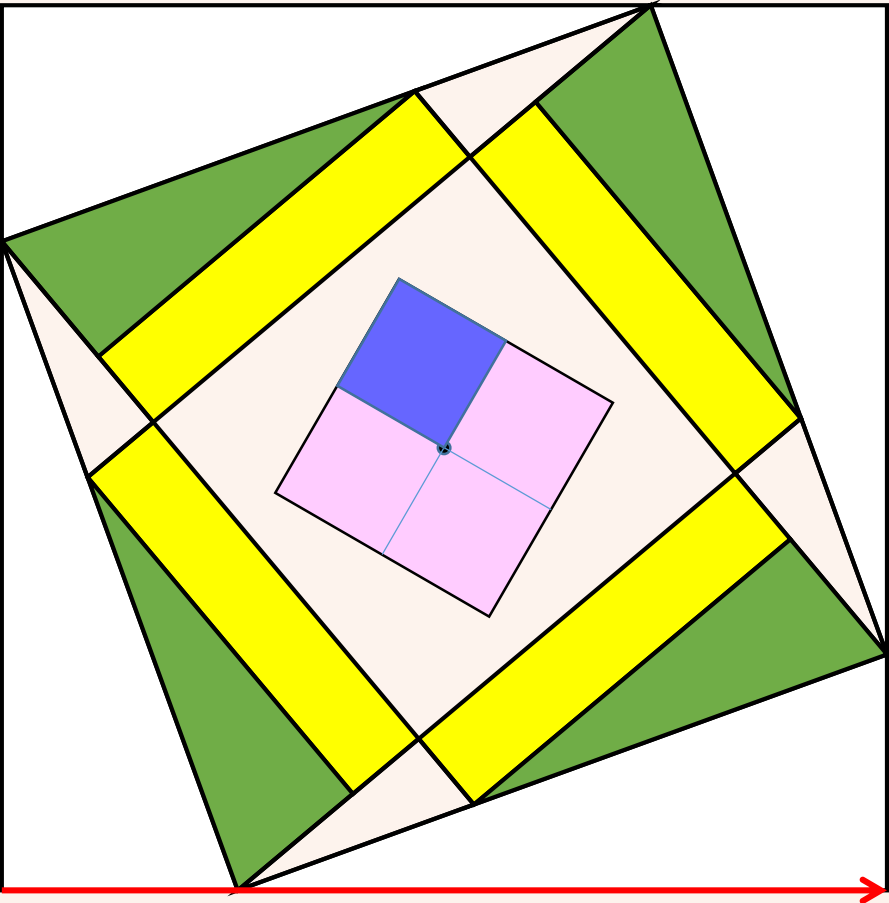
班級：_____ 座號：_____
姓名：_____



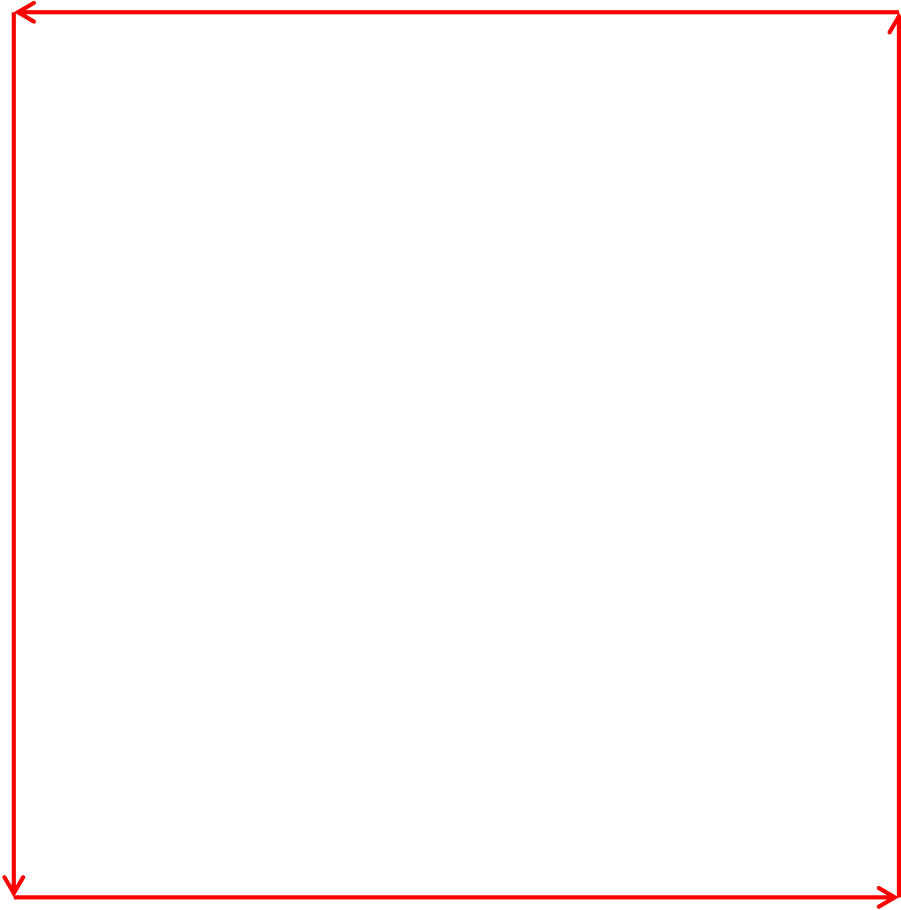
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姓名：_____



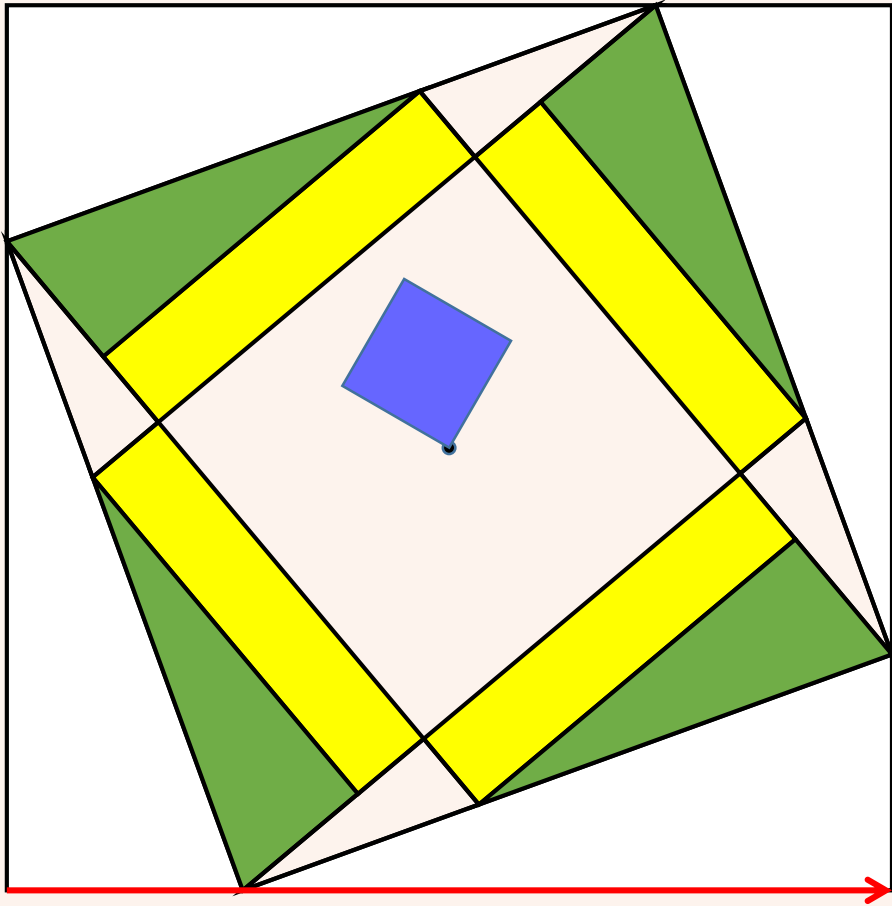
解構練習1



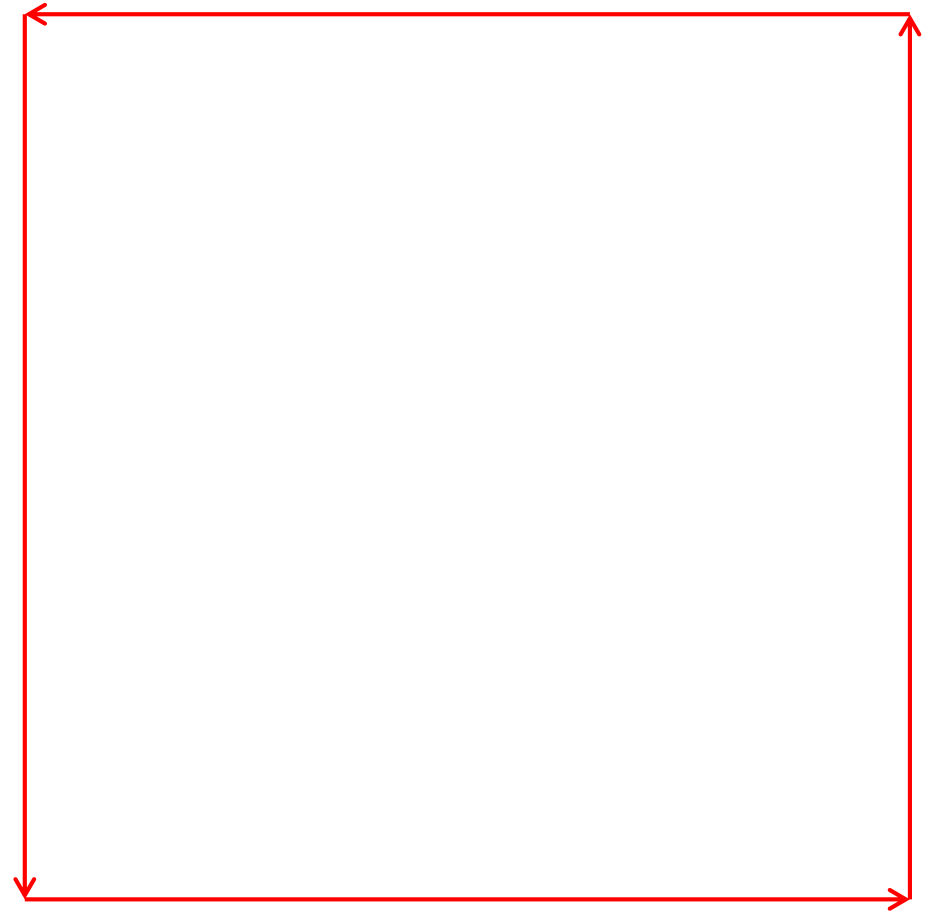
重構練習1



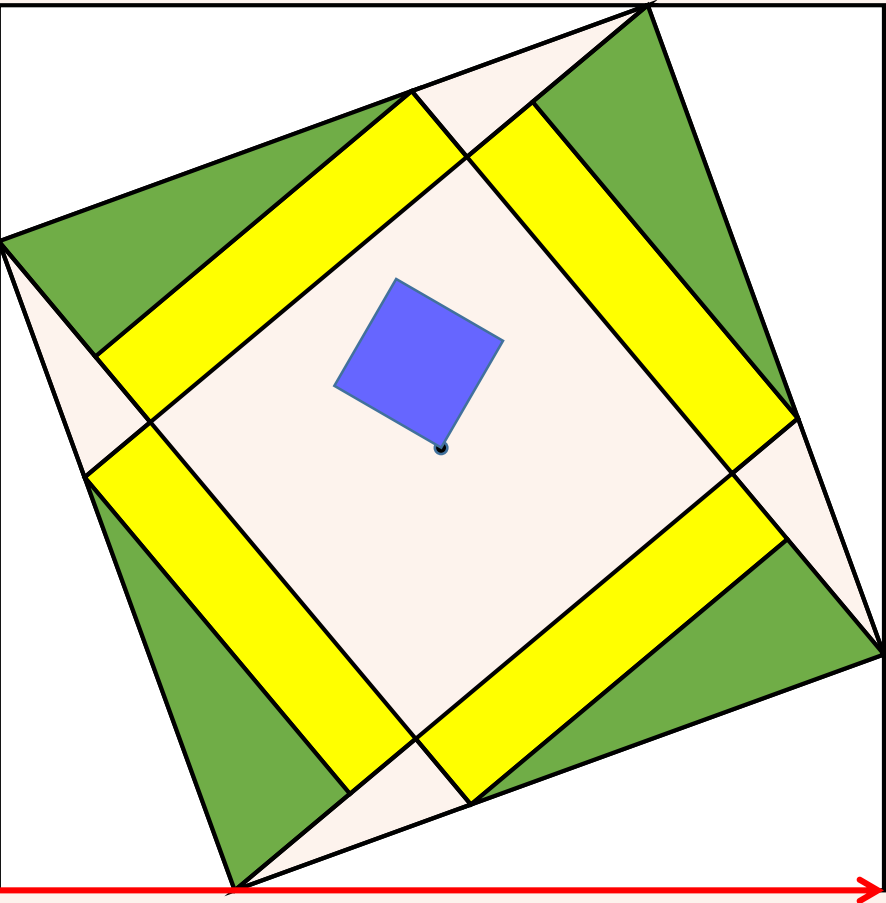
解構練習2



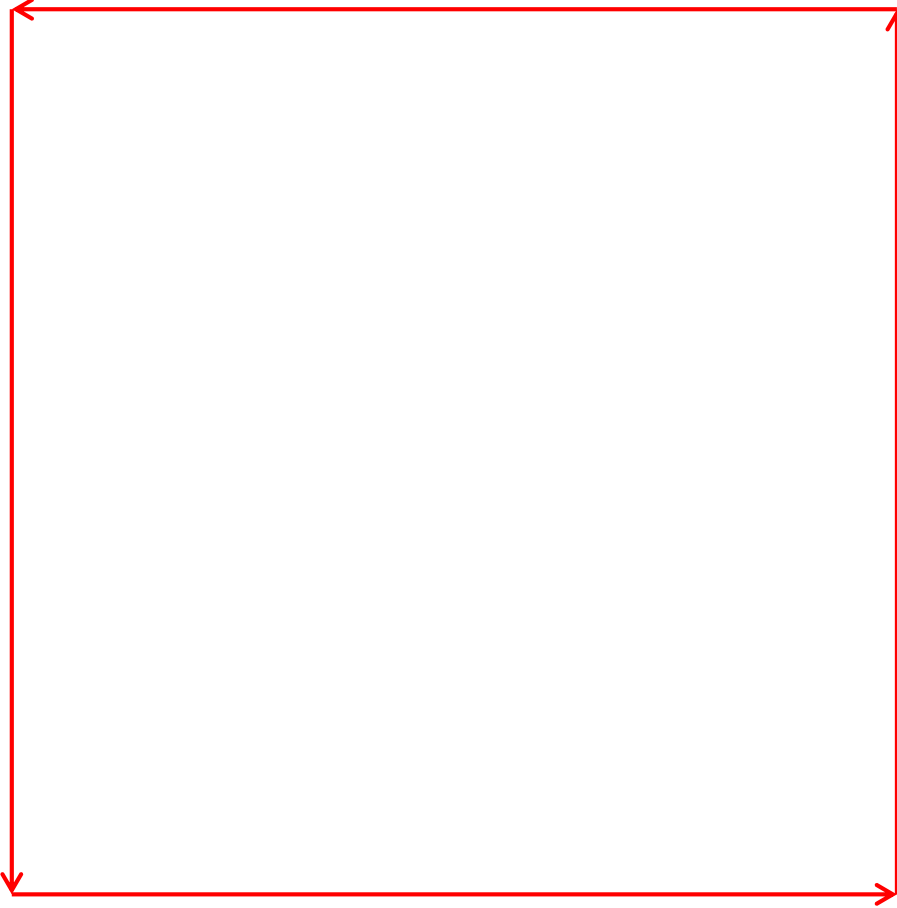
重構練習2



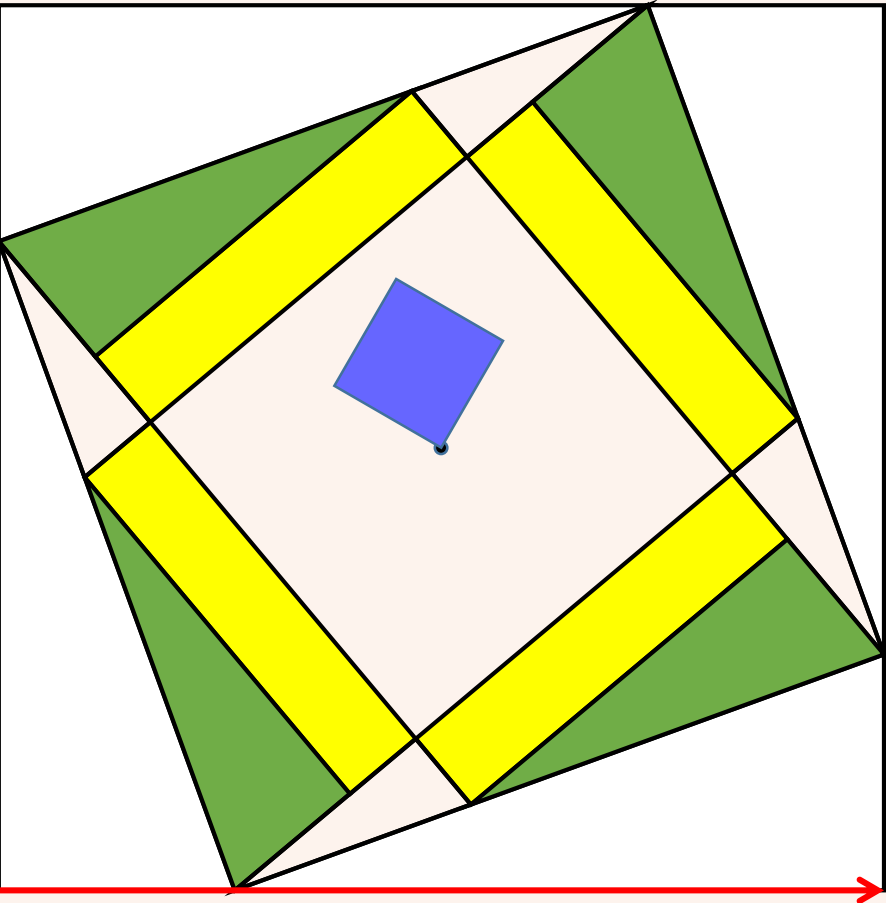
解構練習4



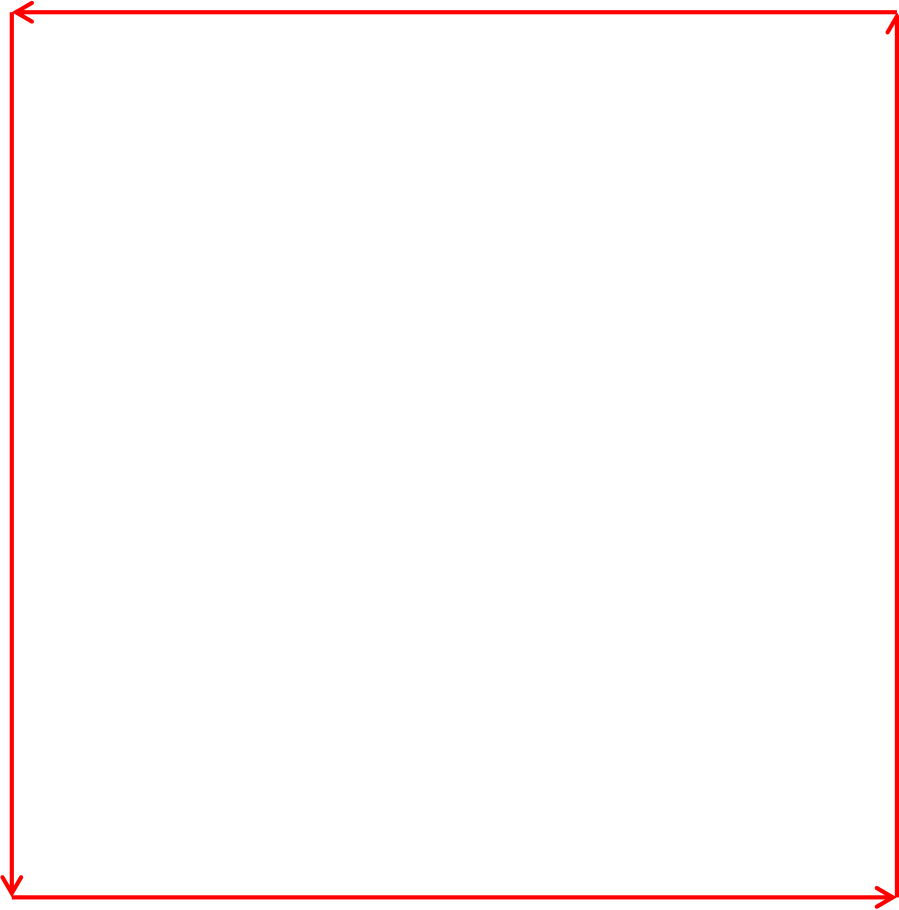
重構練習4



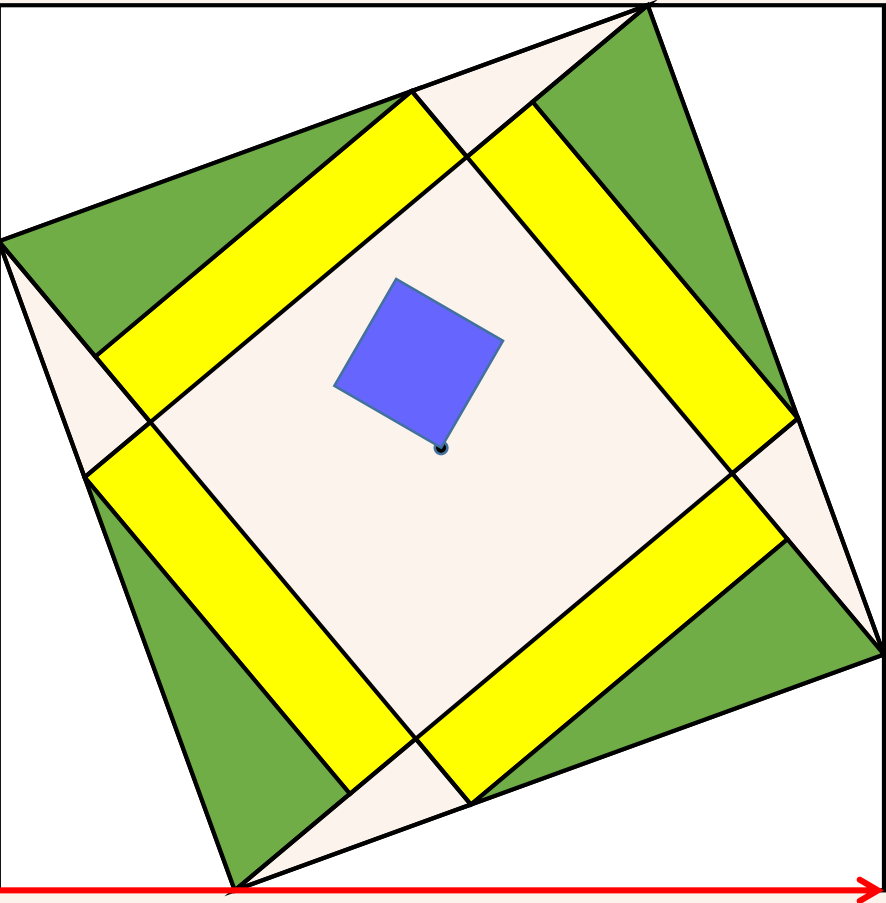
解構練習5



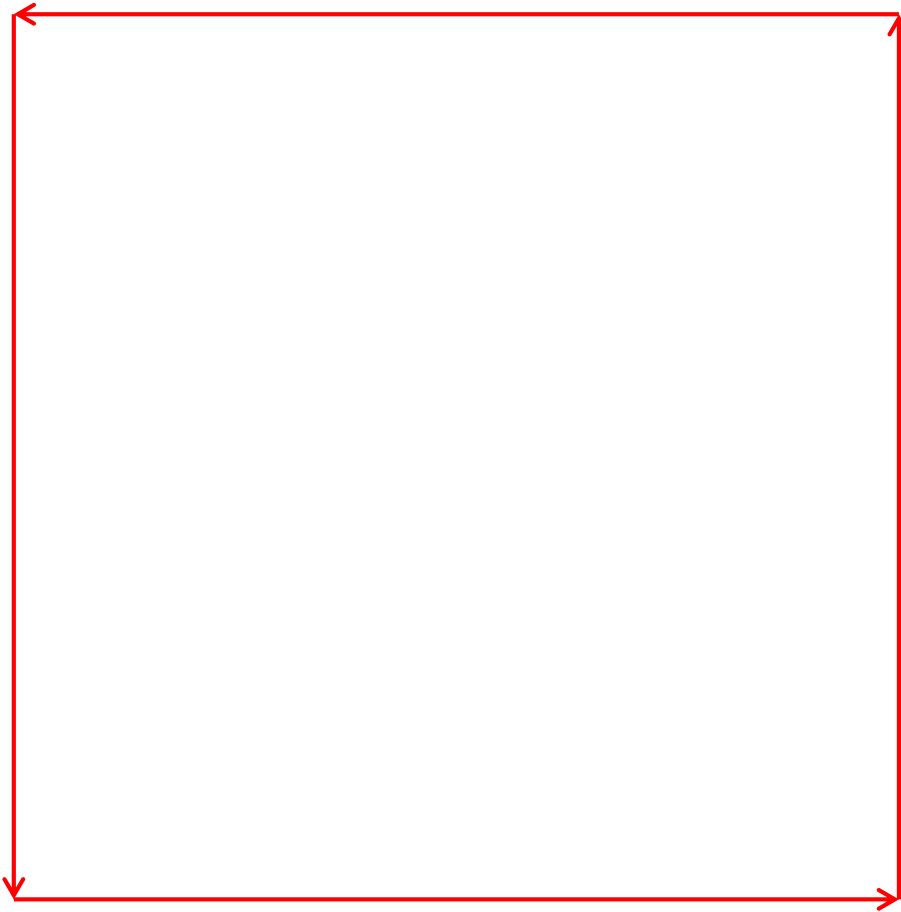
重構練習5



解構練習6

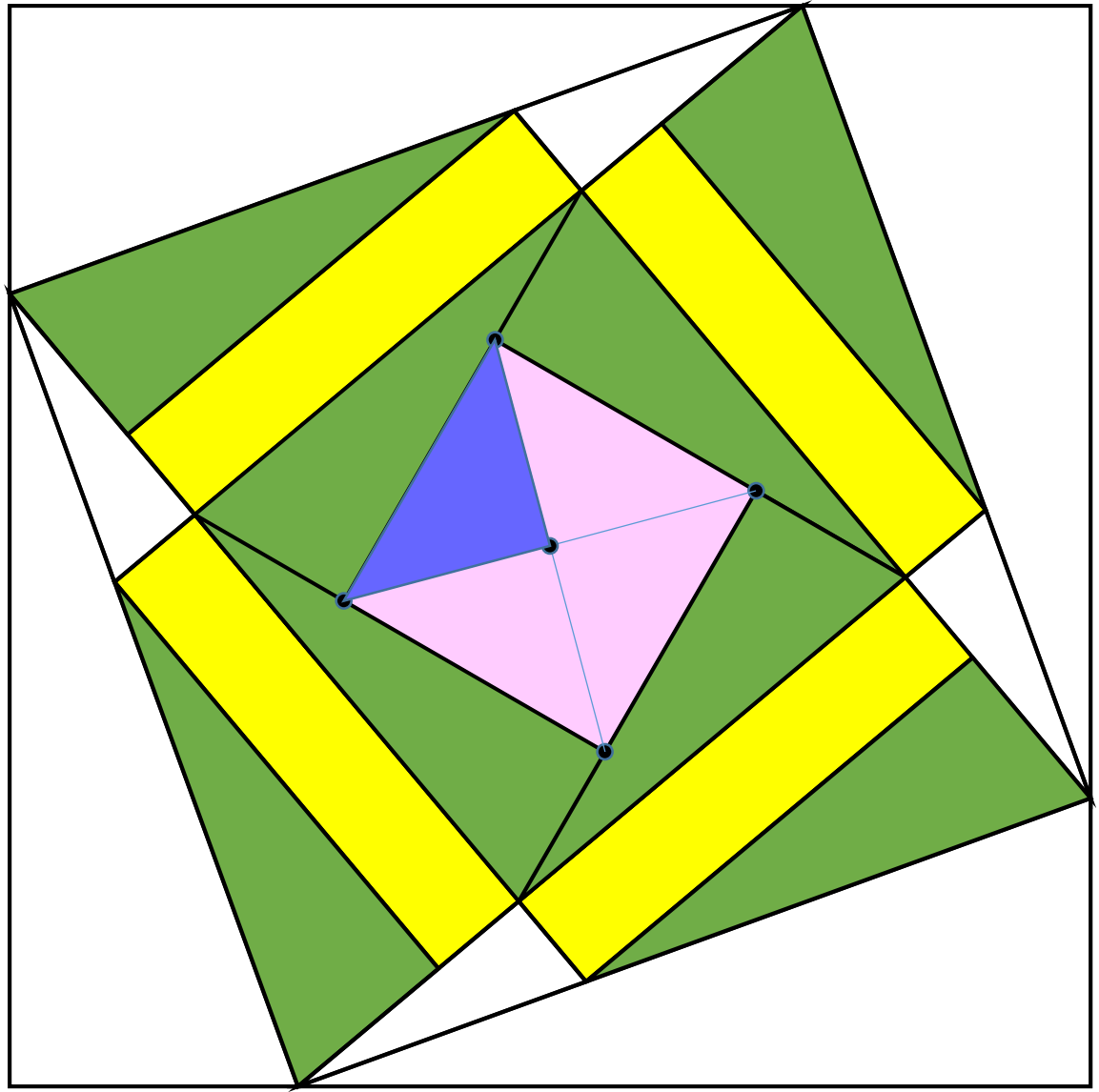


重構練習6

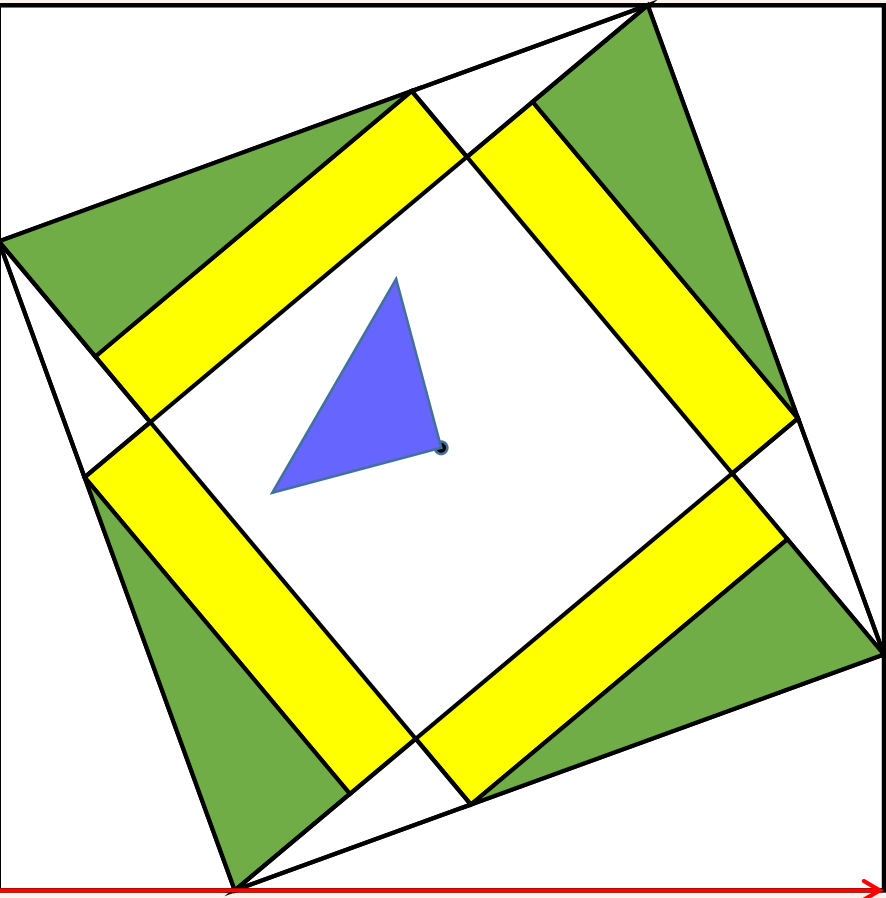


另一種解法

班級：_____ 座號：_____
姓名：_____



解構練習7



重構練習7

