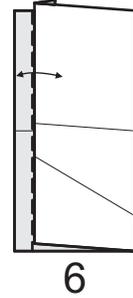
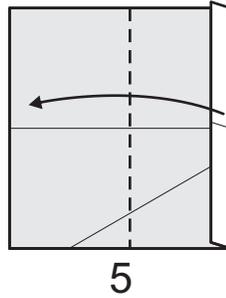
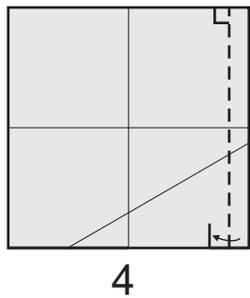
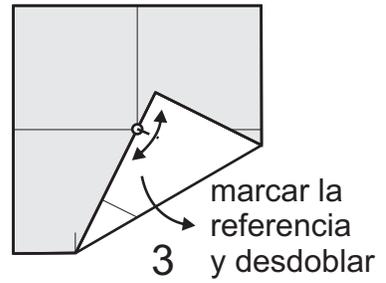
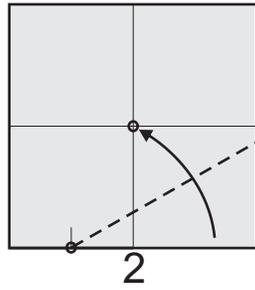
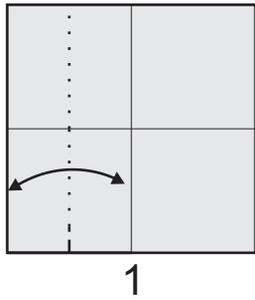
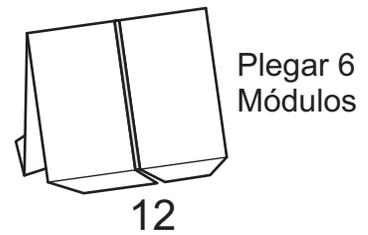
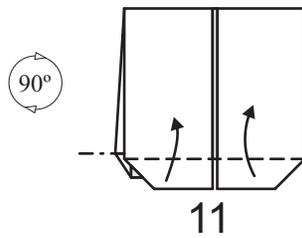
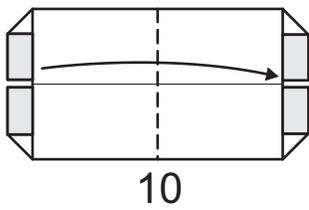
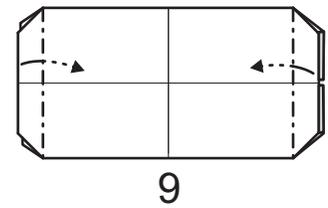
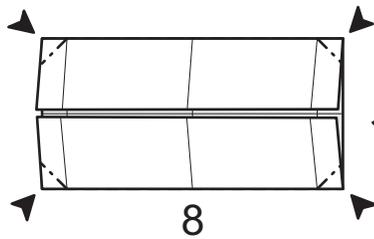
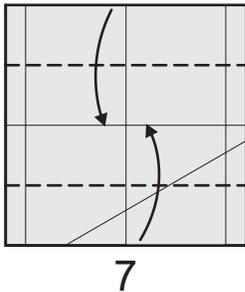


Rectángulos Áureos Ortogonales

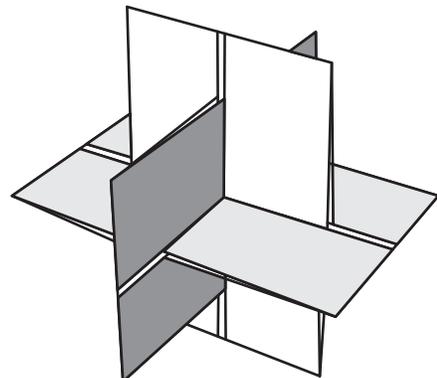
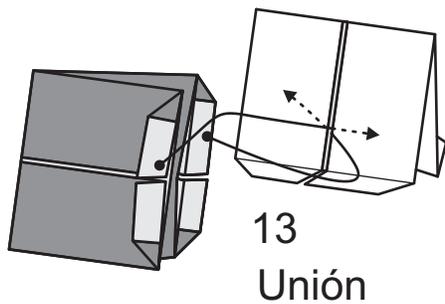
Jaime Niño



Marcar y desdoblar hasta el paso 4



Plegar 6 Módulos



Demostración:

Debemos saber que un rectángulo áureo cumple la siguiente relación:

$$\varphi = \frac{\text{Medida lado mayor}}{\text{Medida lado menor}} = \frac{1 + \sqrt{5}}{2}$$

Y tomando un cuadrado de lado 1.

En el paso 2 (figura 1) de la construcción tenemos las siguientes medidas:

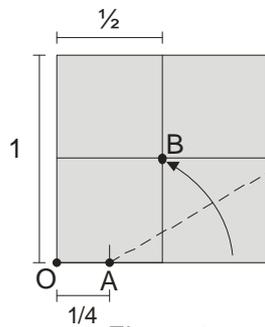


Figura 1.

Tenemos que $\overline{AB} = \frac{\sqrt{5}}{4}$

$\overline{AB} = \overline{AC}$ por ser coincidentes tras el plegado en el paso 3

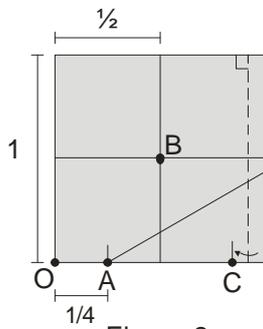
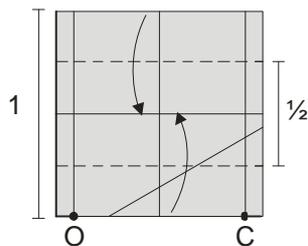


Figura 2.

$$\overline{AB} = \overline{AC} = \frac{\sqrt{5}}{4}$$

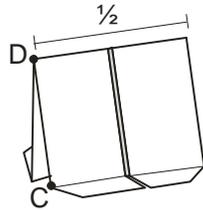
$$\overline{OC} = \overline{OA} + \overline{AC} = \frac{1 + \sqrt{5}}{4}$$

En el paso 4, 5 y 6 realizamos pliegues para trasladar el segmento \overline{OC} al centro de lado inferior del cuadrado



$$\overline{OC} = \frac{1 + \sqrt{5}}{4}$$

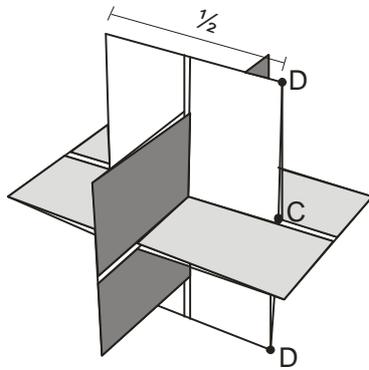
Finalizado el módulo tenemos



En donde

$$\overline{DC} = \frac{\overline{OC}}{2} = \frac{1 + \sqrt{5}}{8}$$

Luego del ensamble



Si tener en cuenta el error generado por el ensamble tendremos

$$\frac{\text{Medida lado Mayor}}{\text{Medida lado menor}} = \frac{\overline{DC} + \overline{DC}}{1/2}$$

$$= \frac{\frac{1 + \sqrt{5}}{8} + \frac{1 + \sqrt{5}}{8}}{1/2} = \frac{1 + \sqrt{5}}{2} = \varphi$$