

Golden Rectangle



This also is golden!
 So the ratio of its side lengths - bigger over smaller - is also ϕ

So $\frac{1}{\phi-1} = \phi = \frac{\text{longer}}{\text{shorter}}$

$$1 = \phi(\phi - 1)$$

or $1 = \phi^2 - \phi$

or $0 = \phi^2 - \phi - 1$

$a=1$ $b=-1$ $c=-1$

Quadratic formula:

$$ax^2 + bx + c = 0$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\phi = \frac{1 \pm \sqrt{1 + 4}}{2}$$

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

$$\varphi = \frac{1 - \sqrt{5}}{2} = \frac{1}{\varphi}$$

The golden
ratio

or the

"the golden mean"

$$\varphi \approx 1.618$$



