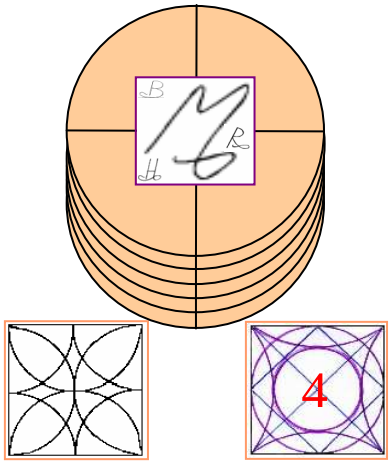
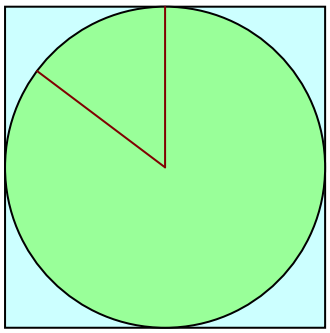
New
Mathematical formulae
for new
Geometric Constructions



1 . Radians

Radians



Radians

$$(\ln \sqrt{S^2 * 2} / \ln S)^2 / 2 = M \qquad (\ln S / \ln \sqrt{S^2 * 2})^2 = R$$
$$(\ln \sqrt{s^2 * 2} / \ln s)^2 / 2 = Q \qquad (\ln s / \ln \sqrt{s^2 * 2})^2 = r$$

A radian: 180º / 4*M* = 57.6º

A radian is part of a circle that forms an isosceles triangle where the length of the chord is equal to the radius of the circle.

Radian : $180^\circ / (\ln \sqrt{S^2 * 2} / \ln S)^2 * 2 = 57.6^\circ$

Radian: 18º / 4*M* = 57.6º 4*M* / 180º = 0.01736111…

The chord of the radian is part of the circumference of the circle.
The length of the chord is equal to that of the radius of the circle. This means that an equilateral triangle will be formed if the chord is made into a straight line.

See pages describing chords for the method of producing a straight line from a chord.
Klick 1. Chords

A radian can be represented in different ways:

$\pi / 4 = (\ln \sqrt{s^2 * 2} / \ln s)^2 / 2 =$ every of values for examle 0.7853981633... or other
$\pi = (\ln \sqrt{s^2 * 2} / \ln s)^2 * 2 =$ every of values for examle 3.141592653... or other
Or
every other of values $= (\ln \sqrt{s^2 * 2} / \ln s)^2 / 2 = 0.89465...$
every other of values $= (\ln \sqrt{s^2 * 2} / \ln s)^2 * 2 =$ for examle 3.5786 ...

Bu t
Correct values:

$(\ln \sqrt{S^2 * 2} / \ln S)^2 / 2 =$ only Squaring value $= 0.78125$
$(\ln \sqrt{S^2 * 2} / \ln S)^2 * 2 =$ only Squaring value $= 3.125$

$$(\ln \sqrt{S^2 * 2} / \ln S)^2 / 2 = M$$
$$(\ln S / \ln \sqrt{S^2 * 2})^2 = R$$

M = 0.78125 4*M* = 3.125
R = 0.64 2*R* = 1.28

Squainrg formulae

$(\ln\sqrt{S^2*2}/\ln S)^2/2 = M$

$\rightarrow \quad M = 0.78125$

$(\ln\sqrt{S^2*2}/\ln S)^2 = 2M$

$\rightarrow \quad 2M = 1.5625$

$(\ln\sqrt{S^2*2}/\ln S)^2*2 = 4M$

$\rightarrow \quad 4M = 3.125$

$(\ln S/\ln\sqrt{S^2*2})^2 = R$

$\rightarrow \quad R = 0.64$

$(\ln S/\ln\sqrt{S^2*2})^2*2 = 2R$

$\rightarrow \quad 2R = 1.28$

$(\ln S/\ln\sqrt{S^2*2})^2*3 = 3R$

$\rightarrow \quad 3R = 1.92$

Other values formulae

$(\ln\sqrt{s^2*2}/\ln s)^2/2 = Q$

$\rightarrow \quad Q = 0.----...$

$(\ln\sqrt{s^2*2}/\ln s)^2 = 2Q$

$\rightarrow \quad 2Q = 1.----...$

$(\ln\sqrt{s^2*2}/\ln s)^2*2 = 4Q$

$\rightarrow \quad 4Q = 3.----...$

$(\ln s/\ln\sqrt{s^2*2})^2 = r$

$\rightarrow \quad r = 0.----...$

$(\ln s/\ln\sqrt{s^2*2})^2*2 = 2r$

$\rightarrow \quad 2r = 1.----...$

$(\ln s/\ln\sqrt{s^2*2})^2*3 = 3r$

$\rightarrow \quad 3r = 1.----...$

M = 0.78125

$2M$ = 1.5625

$4M$ = 3.125

$8M$ = 6.25

R = 0.64

$2R$ = 1.28

$3R$ = 1.92

$4R$ = 2.56

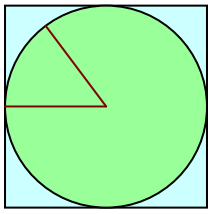
A Radian:

Radian : $180^\circ / ((\ln\sqrt{S^2*2}/\ln S)^2*2) = 57.6^\circ$

Radian : $90^\circ / (\ln\sqrt{S^2*2}/\ln S)^2 = 57.6^\circ$

Radian : $180^\circ / ((\ln S/\ln\sqrt{S^2*2})^2/2) = 57.6^\circ$

Radian : $90^\circ / (\ln S/\ln\sqrt{S^2*2})^2 = 57.6^\circ$



$360° / 8M = 57.6º$ $\quad$ $180° / 4M = 57.6º$ $\quad$ $90° * R = 57.6°$

$45° / M = 57.6° \rightarrow$ $\quad$ $45° / 0.78125 = 57.6°$

$90º * R = 57.6º \rightarrow$ $\quad$ $90º * 0.64 = 57.6º$ $\quad$ $45° * 2R = 57.6º \rightarrow$ $\quad$ $45º * 1.28 = 57.6º$

A circle = 360º

360º = 8*M* = Radian

Radian: 57.6º = (360º / 8*M*)

Radian: 57.6º = (180º / 4*M*)

Radian: 57.6º = (90º / 2*M*)

Radian: 57.6º = (90º * *R*)

Radian: 57.6º = (180º * *R*/2)

Radian: 57.6º = (270º * *R*/3)

Radian: 57.6º = (360º * (*R*/4)