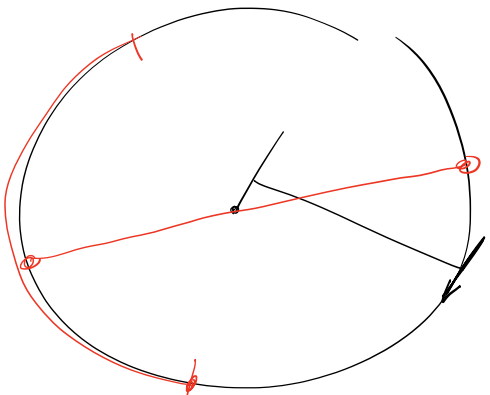
π 3000 Avant J.-C.

$\pi = 3$ Bible



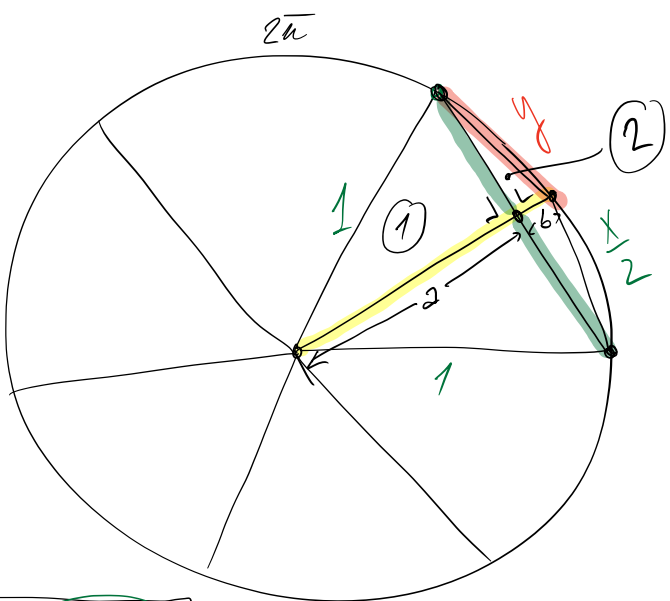
$3\frac{1}{8} \leq \pi \leq 3\frac{1}{7}$ ← Egypte ancienne

$3{,}125 \leq \pi \leq 3{,}1428$

Archimède

$S(6) = 1$

$6 \cdot S(6) = 6$



$y = f(x)$

① $1^2 = a^2 + \left(\frac{x}{2}\right)^2$

② $\left(\frac{x}{2}\right)^2 + b^2 = y^2$

$a + b = 1$

$\pi \simeq \underbrace{S(2n)}_{y} \cdot 2n \cdot \frac{1}{2}$

$$a = \sqrt{1 - \frac{x^2}{4}}$$

$$b = \sqrt{y^2 - \frac{x^2}{4}}$$

isolar a ou b

$$a + b = 1$$

$$b = 1 - a$$

$(\sqrt{z})^2 = z$

$$\sqrt{y^2 - \frac{x^2}{4}} = 1 - \sqrt{1 - \frac{x^2}{4}}$$

$(A - B)^2$

$()^2$ $()^2$

$$y^2 - \frac{x^2}{4} = (1) - 2\sqrt{1 - \frac{x^2}{4}} + \left((1) - \frac{x^2}{4}\right)$$

$A^2 - 2AB + B^2$

$$y^2 = 2 + \frac{x^2}{4} - \frac{x^2}{4} - 2\sqrt{1 - \frac{x^2}{4}}$$

$\sqrt{4}$

$$y^2 = 2 - 2\sqrt{1 - \frac{x^2}{4}}$$

$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$ $\quad a, b > 0$

$$y^2 = 2 - \sqrt{4 - x^2}$$

$$y = \sqrt{2 - \sqrt{4 - x^2}}$$

$$S(2n) = \sqrt{2 - \sqrt{4 - S(n)^2}}$$