François MENDZINA ESSOMBA PI FORMULAE

My some pi π formulae.

$$\pi = 2^n \overbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{2}}}}}}^{n}$$

$$\pi = 3 \times 2^{n-1} \overbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{3}}}}}}^{n}$$

$$\pi = 5 \times 2^{n-1} \overbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{2 + \sqrt{\varphi + 2}}}}}}}^{n}$$

$$\pi = 17 \times 2^{n-1} \overbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{2 + \sqrt{2cos\left(\frac{\pi}{17}\right) + 2}}}}}}}^{n}$$

Avec :

$$\cos\frac{\pi}{17} = \frac{1}{16}\left(1 - \sqrt{17} + \sqrt{34 - 2\sqrt{17}} + \sqrt{68 + 12\sqrt{17} + 2\sqrt{680 + 152\sqrt{17}}}\right)$$

De manière générale :

$$\forall p \in \mathbb{R}/p \neq 0$$

$$\pi = p \times 2^{n-1} \overbrace{\sqrt{2 - \sqrt{2 + \sqrt{2 + \sqrt{2 + \cdots + \sqrt{2 + \sqrt{2cos\left(\frac{\pi}{p}\right) + 2}}}}}}}^{n}$$

Références : https://www.facebook.com/francois.mendzinaessomba.