Unit n°193

Sandbox 2

$$\operatorname{scf}\left(\frac{1}{\sqrt[n]{e}-1}\right) \text{ and } \operatorname{gcf}\left(\frac{1}{\sqrt[n]{e}-1}\right)$$

$$\frac{1}{e-1} = [0;1,1,2,1,1,4,1,1,6,1,1,8,1,\ldots]$$

$$= 0 + \frac{1|}{|1} + \frac{2|}{|2} + \frac{3|}{|3} + \frac{4|}{|4} + \frac{5|}{|5} + \ldots$$

$$\frac{1}{\sqrt{e}-1} = [1;1,1,5,1,1,9,1,1,13,1,1,17,1,\ldots]$$

$$= 1 + \frac{2|}{|3} + \frac{4|}{|5} + \frac{6|}{|7} + \frac{8|}{|9} + \frac{10|}{|11} + \ldots$$

$$\frac{1}{\sqrt[3]{e}-1} = [2;1,1,8,1,1,14,1,1,20,1,1,26,1,\ldots]$$

$$= 2 + \frac{3|}{|5} + \frac{6|}{|8} + \frac{9|}{|11} + \frac{12|}{|14} + \frac{15|}{|17} + \ldots$$

$$\frac{1}{\sqrt[4]{e}-1}=[3;1,1,11,1,1,19,1,1,27,1,1,35,1,\ldots]$$

$$=3+\frac{4|}{|7}+\frac{8|}{|11}+\frac{12|}{|15}+\frac{16|}{|19}+\frac{20|}{|23}+\ldots$$

$$\frac{1}{\sqrt[5]{e}-1}=[4;1,1,14,1,1,24,1,1,34,1,1,44,1,\ldots]$$

$$=4+\frac{5|}{|9}+\frac{10|}{|14}+\frac{15|}{|19}+\frac{20|}{|24}+\frac{25|}{|29}+\ldots$$

$$\frac{1}{\sqrt[n]{e}-1}=[n\text{-}1;1,1,3n\text{-}1,1,1,5n\text{-}1,1,1,7n\text{-}1,1,1,9n\text{-}1,1,\ldots]$$

$$=n\text{-}1+\frac{n|}{|2n\text{-}1}+\frac{2n|}{|3n\text{-}1}+\frac{3n|}{|4n\text{-}1}+\frac{4n|}{|5n\text{-}1}+\frac{5n|}{|6n\text{-}1}+\ldots$$

$$\frac{\sqrt[n]{e}\pm1}{2}=[\begin{cases}1\\0\end{cases};2n\text{-}1;6n,10n,14n,18n,22n,\ldots]$$

$$=\begin{cases}1\\0\end{cases}+\frac{|}{|}+\frac{|}{|}+\frac{|}{|}+\frac{|}{|}+\frac{|}{|}+\ldots$$

$$\frac{\sqrt[n]{e}+1}{\sqrt[n]{e}-1}=[2n;6n,10n,14n,18n,22n,...]$$

$$=2n+\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+...$$

$$\frac{\sqrt[n]{e}}{\sqrt[n]{e}\pm1}=[\begin{cases} n; \\ 0;1,1,n\text{-}1 \end{cases},1,1,3n\text{-}1;1,1,5n\text{-}1,1,1,7n\text{-}1,1,1,...]$$

$$=\left\{ +\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+\cfrac{|}{|}+... \right.$$