11.2.20.

$$\frac{\pi}{4} = \frac{1}{2} + \frac{1}{1\ 3} - \frac{1}{3\ 5} + \frac{1}{5\ 7} - \frac{1}{7\ 9} + \ldots\ldots$$

Visas !

$$\frac{\pi}{4} = \frac{1}{2} + \sum_{m=1}^{\infty} \frac{-(-1)^m}{(2m-1)(2m+1)}$$

$$f(x) = \begin{cases} 0 \ , & -\pi < x < 0 \\ \sin x \ , & 0 < x < \pi \end{cases}$$

$$f \sim \frac{1}{\pi} + \frac{1}{2}\sin x - \sum_{n=2}^{\infty} \frac{1+(-1)^n}{\pi(n^2-1)}\cos nx$$

$$\sin\frac{\pi}{2}=f\left(\frac{\pi}{2}\right)=\frac{1}{\pi}+\frac{1}{2}\sin\frac{\pi}{2}-\sum_{n=2}^{\infty}\frac{1+(-1)^n}{\pi(n^2-1)}\cos\frac{n\pi}{2}$$

$$\cos\frac{n\pi}{2}=\begin{cases}0\ , & n=2m+1\\ (-1)^m\ , & n=2m\end{cases}$$

$$\frac{\pi}{2}=1-\sum_{m=1}^{\infty}\frac{2}{(2m)^2-1}(-1)^m$$

$$\frac{\pi}{4}=\frac{1}{2}-\sum_{m=1}^{\infty}\frac{(-1)^m}{\pi((2m)^2-1)}$$