

Approximation d'un polygone régulier par une série de Fourier

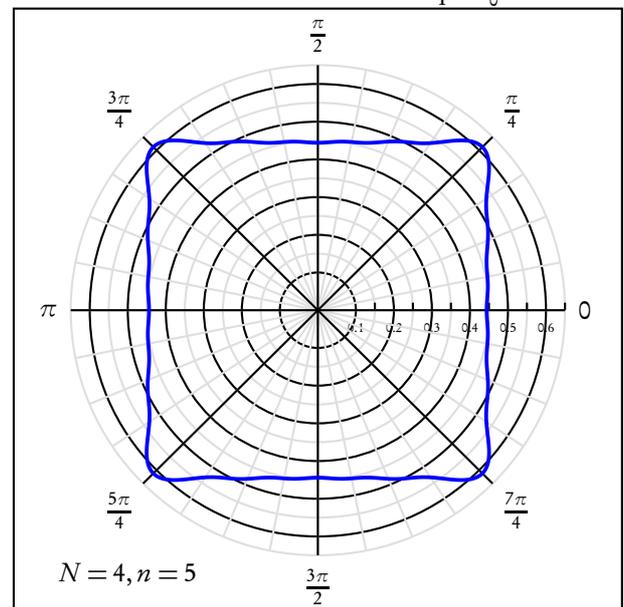
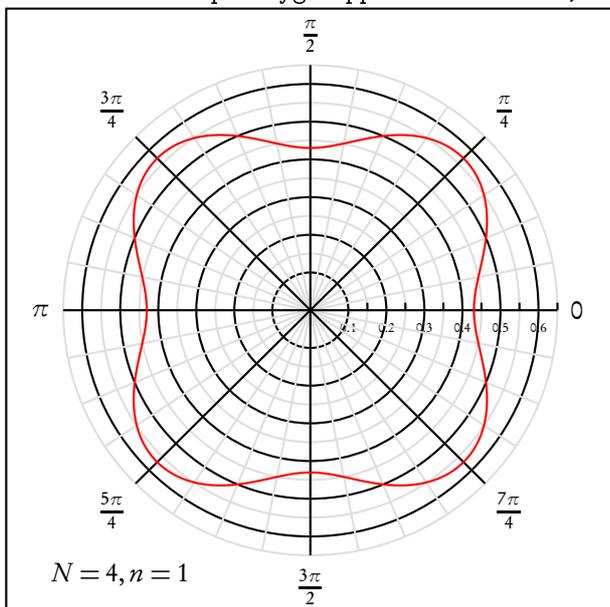
8 juillet 2014

L'équation polaire du polygone régulier de N côtés s'écrit :

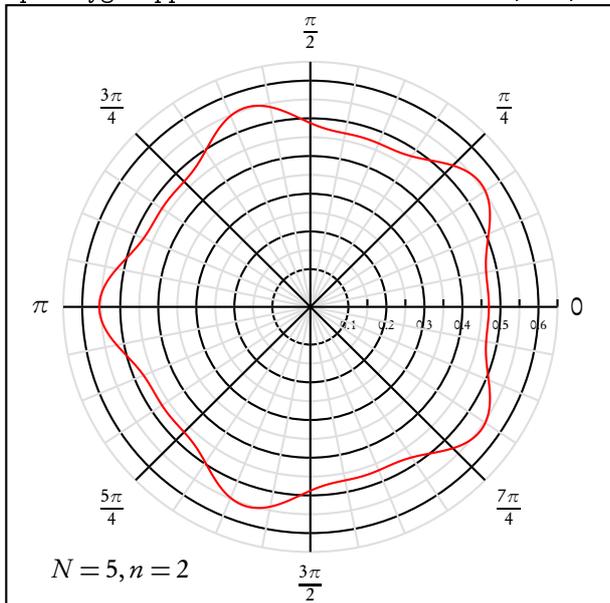
$$\rho(\theta) = \frac{1}{2} + \frac{\sum_{n=1}^p \left(\int_{-\frac{\pi}{N}}^{\frac{\pi}{N}} \frac{\cos(Nnt)}{\cos(t)} dt \right) \cos(Nn\theta)}{\int_{-\frac{\pi}{N}}^{\frac{\pi}{N}} \frac{dt}{\cos(t)}}$$

Paramètres : p = nombre de termes, N = nombre de côtés du polygone.

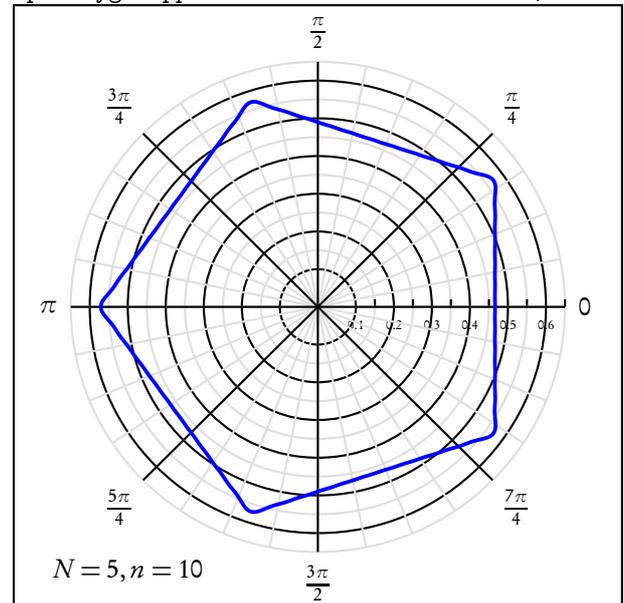
Dans la commande : `\psPolygonApproximation[N=4,n=1]`, n est le nombre de termes de la suite autre que a_0 .



`\psPolygonApproximation[linecolor=red,N=4,n=1]`

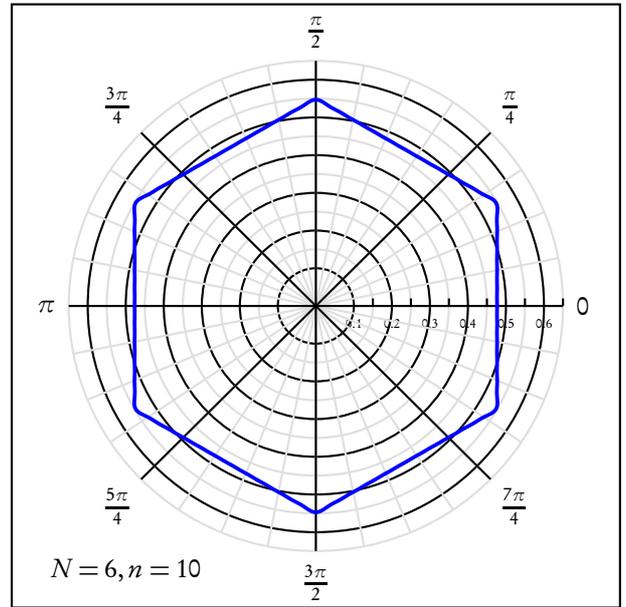
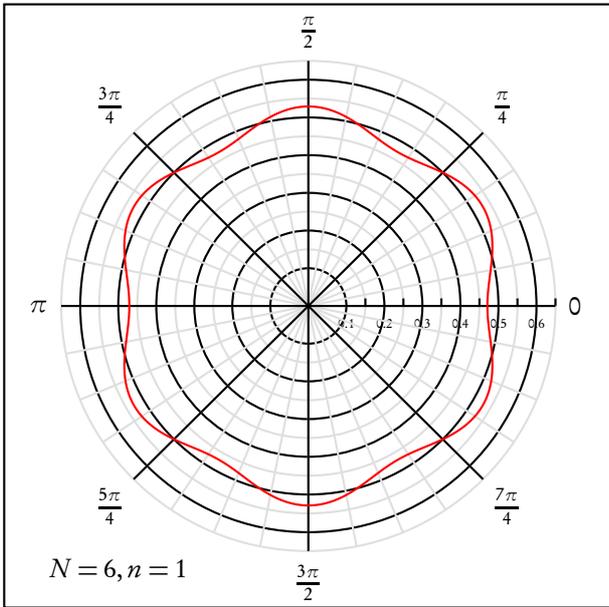


`\psPolygonApproximation[linecolor=blue,n=5]`

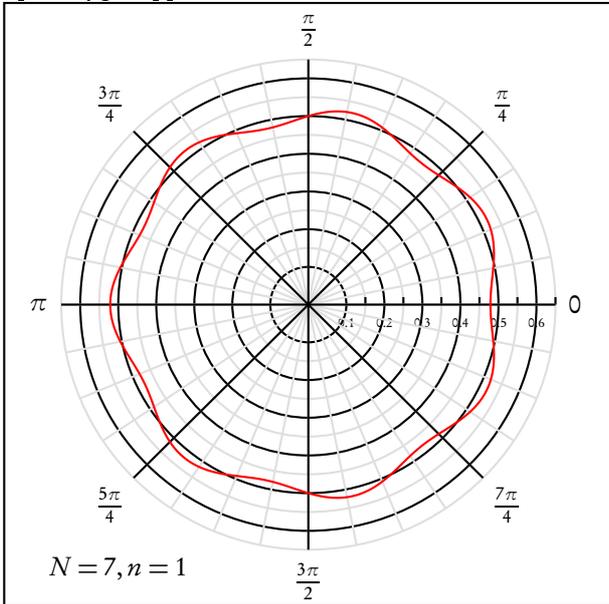


`\psPolygonApproximation[linecolor=red,N=5,n=2]`

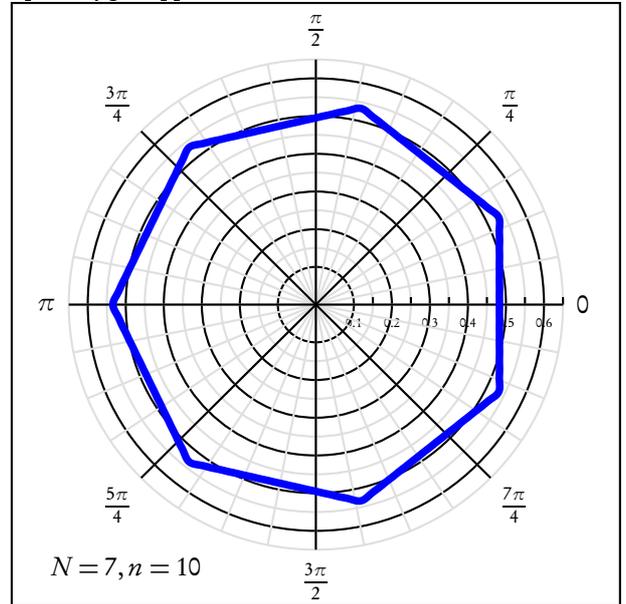
`\psPolygonApproximation[linecolor=blue,n=10,N=5]`



`\psPolygonApproximation[linecolor=red,N=5,n=2]`



`\psPolygonApproximation[linecolor=blue,n=10,N=5]`



`\psPolygonApproximation[linecolor=red,N=5,n=2]`

`\psPolygonApproximation[linecolor=blue,n=10,N=5]`