```
directorio = Directory[]
ftest[z_] = \sum_{k=1}^{\infty} \frac{1}{k^6} (z^k + z^k (-k))
TeXForm[%]
I forma TeX
Attributes[ftest] = {Listable}
(* cardan.wls obtains the system of arcs related with
the cardan device and write it as arcosalpha *)
n = 30; T = 2 * Pi; betacardan = Pi / 6;
            número pi
Get["Dropbox/articulo2023/cardan.wls"]
(* arcos.wls obtains all the system of
arcs related with arcosalpha in the sense of
the paper and the related nodal systems *)
Get["Dropbox/atypeofinterpolation2023/arcos.wls"]
(* derivadas.wls obtains the derivatives
used in the paper for a nodal system in T
 in this case for alphaW2n nodal system *)
listaalpha = alphaW2n;
listaarcosalpha = arcosalphaW2n;
Get["Dropbox/atypeofinterpolation2023/derivadas.wls"];
derivadasalphaW2n = derivadas;
derivadassegundasalphaW2n =
 derivadas * factoresderivadassegundas;
(* same comment as before *)
listaalpha = alphaYn;
listaarcosalpha = arcosalphaYn;
Get["Dropbox/atypeofinterpolation2023/derivadas.wls"];
```

```
derivadasalphaYn = derivadas;
derivadassegundasalphaYn =
           derivadas * factoresderivadassegundas;
(* same comment as before *)
listaalpha = alphaZn;
listaarcosalpha = arcosalphaZn;
Get["Dropbox/atypeofinterpolation2023/derivadas.wls"];
derivadasalphaZn = derivadas;
derivadassegundasalphaZn =
           derivadas * factoresderivadassegundas;
  (* u and v in the sense of the paper *)
u = ftest[alphaW2n]; v = ftest'[alphaW2n];
  (* semi Hermite and semi Hermite-
     Fejer interpolants using the barycentric formulae *)
SHFejer[z_] =
            \left( \sum_{k=1}^{n} \left\{ \frac{\text{alphapwp} \, \llbracket 2 \, k \rrbracket \times \text{derivadasalphaZn} \, \llbracket k \rrbracket \times \text{u} \, \llbracket 2 \, k \rrbracket}{(z - \text{alphaW2n} \, \llbracket 2 \, k \rrbracket) \, \left( \text{derivadasalphaW2n} \, \llbracket 2 \, k \rrbracket \right) \, {}^{\wedge} \, 2} \right. + \\ \left( \frac{1}{z} + \frac{1}
                                          (alphapwp [2 k - 1]) /
                                                          ((z - alphaW2n[2k - 1]) derivadasalphaW2n[2k - 1] \times ((z - alphaW2n[2k - 1]))
                                                                    derivadasalphaYn[k]) \left(\frac{1}{(z-alphaW2n[2k-1])} - \frac{1}{(z-alphaW2n[2k-1])}\right)
                                                            derivadassegundasalphaW2n [2 k - 1]
                                                                                2 derivadasalphaW2n[2 k − 1]
                                                          \left(\sum_{k=1}^{n}\left(\frac{\text{alphapwp}[2\ k]\times \text{derivadasalphaZn}[k]}{(z-\text{alphaW2n}[2\ k])\ (\text{derivadasalphaW2n}[2\ k])\ ^2}\right. + \\ \\ \left(\frac{z-\text{alphaW2n}[2\ k]}{(z-\text{alphaW2n}[2\ k])\ ^2}\right) + \\ \left(\frac{z-\text{alphaW2n}[2\ k]}{(z-\text{alphaW2n}[2\ k]}\right) + \\ \left(\frac{z-\text{alphaW2n}[2\ k]}{(z-\text{
                                           (alphapwp [2 k - 1]) /
                                                          derivadasalphaYn[k])) \left( \frac{1}{(z-alphaW2n[2 k-1])} - \frac{1}{(z-alphaW2n[2 k-1])} \right)
```

```
derivadassegundasalpha \verb|W2n[2k-1]|
                                                                                                                                               2 derivadasalphaW2n[2 k − 1]
                                                                                                        \frac{\text{derivadassegundasalphaYn}[\![k]\!]}{2\;\text{derivadasalphaYn}[\![k]\!]}\;+\;\frac{3\;n}{2}\left)\right)\bigg)\;;
SHerm[z] =
                    \left(\sum_{k=1}^{n} \left( \frac{\text{alphapwp} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \times \text{derivadasalphaZn} \hspace{0.05cm} \llbracket k \rrbracket \times \text{u} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \hspace{0.1cm} + \hspace{0.1cm} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \hspace{0.1cm} \left( \text{derivadasalphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \hspace{0.1cm} \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( \frac{1}{2} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) \right) + \hspace{0.1cm} \left( z - \text{alphaW2n} \hspace{0.05cm} \llbracket 2 \hspace{0.1cm} k \rrbracket \right) + \hspace{0
                                                                                      (alphapwp [2 k - 1]) / 
                                                                                                                \begin{array}{l} \text{(($z$-alphaW2n[2$k-1]) derivadasalphaW2n[2$k-1]]} \times \\ \text{derivadasalphaYn[k]))} \end{array} \left( \frac{1}{(z-alphaW2n[2$k-1]])} - \right. \end{array} 
                                                                                                                   derivadassegundasalpha \texttt{W2n} \llbracket 2 \; k - 1 \rrbracket
                                                                                                                                                          2 derivadasalphaW2n [2 k - 1]
                                                                                                                  \frac{\text{derivadassegundasalphaYn} \llbracket k \rrbracket}{2 \; \text{derivadasalphaYn} \llbracket k \rrbracket} \; + \; \frac{3 \; n}{2} \; \right) \; u \; \llbracket 2 \; k - 1 \rrbracket \; \right) \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \; \llbracket k \rrbracket \; + \; \frac{3 \; n}{2} \; derivadasalphaYn \;
                                                  \sum_{k=1}^{n} \left( \left( \text{alphapwp} \left[ 2 \ k - 1 \right] \right) / \left( \left( z - \text{alphaW2n} \left[ 2 \ k - 1 \right] \right) \right)
                                                                                                                         derivadasalphaW2n[2k-1] ×
                                                                                                                        derivadasalphaYn[\![k]\!])) \ v[\![2\ k-1]\!]) \ \bigg| /
                                 \left(\sum_{k=1}^{n}\left(\frac{\text{alphapwp}[2\ k]\times \text{derivadasalphaZn}[k]}{(z-\text{alphaW2n}[2\ k])\ (\text{derivadasalphaW2n}[2\ k])\ ^2}\right.^+
                                                                            (alphapwp[2k-1])
                                                                                                        ((z - alphaW2n[2k-1]) derivadasalphaW2n[2k-1] \times ((z - alphaW2n[2k-1]) \times ((z - alphaW2n[2k-1])) derivadasalphaW2n[2k-1])
                                                                                                                        derivadasalphaYn \llbracket k \rrbracket)) \quad \left( \frac{1}{(z-alphaW2n \llbracket 2 \ k-1 \rrbracket)} - \right.
                                                                                                        \frac{\text{derivadassegundasalphaW2n} \llbracket 2 \text{ k-1} \rrbracket}{\text{2 derivadasalphaW2n} \llbracket 2 \text{ k-1} \rrbracket} \ -
                                                                                                        \frac{\text{derivadassegundasalphaYn}[k]}{2 \text{ derivadasalphaYn}[k]} + \frac{3 \text{ n}}{2} \right) \bigg) \bigg];
```

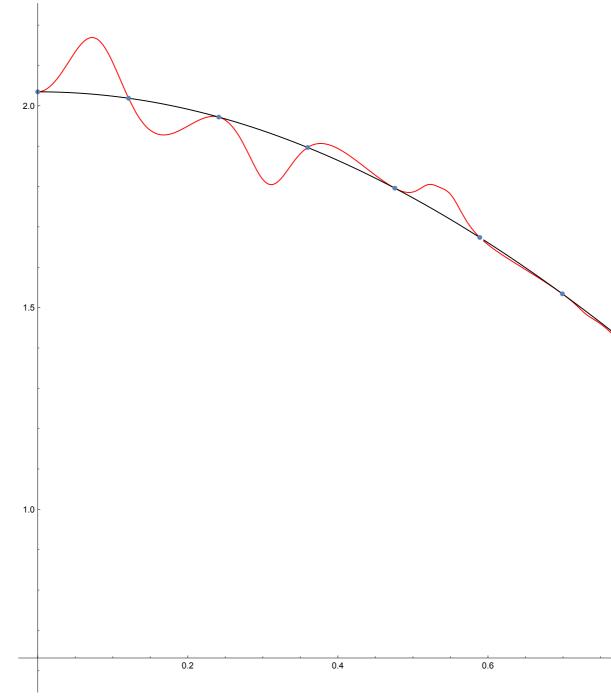
Out[0]=

Out[0]=

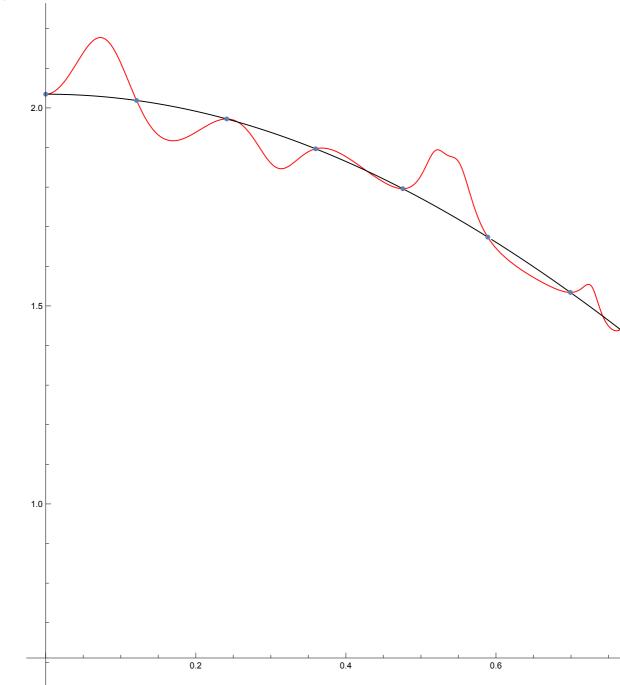
Out[0]=

```
BB = Plot[\{Re[SHerm[E^{(Ix)}]\}, Re[ftest[E^{(Ix)}]]\},
     _represent··· _parte real __núm··· _número i __parte real
                                                        _núm··· _número i
    \{x, 0, Pi/4 + .45\}, PlotRange \rightarrow Full, PlotPoints \rightarrow 200,
                              Lrango de representac··· Lcompleto Lnúmero de puntos en la representación
   PlotStyle → { {Red, Thickness[.001] },
   Lestilo de representación Lrojo Lgrosor
      {Black, Thickness[.001]}}, AspectRatio \rightarrow 5/7];
               grosor
                                            cociente de aspecto
BB1 = Plot[{Re[SHFejer[E^(Ix)]], Re[ftest[E^(Ix)]]},
       represent··· parte real
                               _núm···_número i __parte real __núm···_número i
    \{x, 0, Pi/4 + .45\}, PlotRange \rightarrow Full, PlotPoints \rightarrow 200,
                              Lrango de representac··· Lcompleto Lnúmero de puntos en la representación
   PlotStyle → { {Red, Thickness[.001] },
   Lestilo de representación Lrojo
                             grosor
      {Black, Thickness[.001]}}, AspectRatio \rightarrow 5/7];
               grosor
                                            Lcociente de aspecto
AA = Table[{Re[Log[alphaW2n[k]] / I],
    Re[ftest[alphaW2n[k]]]}, {k, 1, 2n}];
    parte real
AA = ListPlot[AA, PlotStyle → PointSize[.005]];
     L'estilo de representac··· L'amaño de punto
Show[BB, AA]
muestra
Show[BB1, AA]
Imuestra
/Users/eliasberriochoaesnaola
PolyLog\left[6, \frac{1}{7}\right] + PolyLog\left[6, z\right]
{Listable}
```

Out[0]=







 $\label{lem:lemma$