```
(*
Scrieti un program care sa ne realizeze interpolarea Hermite
 pentru o curba data parametric, folosind intervalul [0,1]
*)

(*
    f[x] = ∛x  , pe intervalul [0,27]
     !!!! probleme in 0 !!!!
*)

T = {0, 1};
X = {0.008, 1, 8, 27};

f[x_] = ∛x ;

n = Length[T];

For[i = 1, i ≤ n, i++,
 a = 1;
 For[j = 1, j ≤ n, j++,
  If[j ≠ i, a = a * (t - T[[j]]) / (T[[i]] - T[[j]])];
  L[i, t_] = a];
]

For[i = 1, i ≤ n, i++,
 H[i, t_] = Simplify[(1 - 2 D[L[i, t], t] (t - T[[i]])) L[i, t]^2];
 Hb[i, t_] = Simplify[(t - T[[i]]) L[i, t]^2];
]

For[i = 1, i ≤ n, i++,
 Print[H[i, t]];
 Print[Hb[i, t]];
]
```

$(-1+t)^2\,(1+2t)$

$(-1+t)^2\,t$

$-t^2\,(-3+2t)$

$(-1+t)\,t^2$

```
c[t_] := {t, f[t]};

v[t_] = D[c[t], t];

(* nrarc este numarul de arce Hermite *)

nrarc = Length[X] - 1;
```

```
For[k = 1, k ≤ nrarc, k++,
 A[1] = c[X[[k]]];
 V[1] = v[X[[k]]];
 A[2] = c[X[[k + 1]]];
 V[2] = v[X[[k + 1]]];
 L[t_] = Simplify[∑_{i=1}^{n} (L[i, t] A[i])];
 Lg[k] = ParametricPlot[L[t], {t, 0, 1}, PlotStyle → {Thickness[0.005], Red}];
 curba[k] = ParametricPlot[c[t], {t, X[[k]], X[[k + 1]]}, PlotStyle → Black];
 PA[k] = Graphics[{Red, PointSize[Large], Point[A[1]]}];
 PB[k] = Graphics[{Red, PointSize[Large], Point[A[2]]}];
 H[t_] = Simplify[∑_{i=1}^{n} (H[i, t] A[i] + Hb[i, t] V[i])];
 Hg[k] =
  ParametricPlot[H[t], {t, 0, 1}, PlotStyle → {Thickness[0.005], Orange}];
]

capat = Graphics[{Red, PointSize[Large], Point[c[X[[k]]]]}];

cercalb =
  ParametricPlot[{12 + 15 Cos[s], 5 + 15 Sin[s]}, {s, 0, 2 Pi}, PlotStyle → White];
```

```
Show[cercalb, Hg[1], Lg[1], curba[1], PA[1], PB[1], Hg[2], curba[2],
 Lg[2], PA[2], PB[2], Hg[3], curba[3], Lg[3], PA[3], PB[3], capat]
```