Entrée

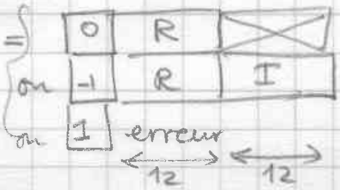
A0 polynôme $Q = \mathcal{P}_{A0}$ normalisé ≠ cte à coef entiers

A1 table des valeurs :

$V_1 = \begin{cases} \text{réel } R_1 \\ \text{ou complexe } R + iI \end{cases}$ flottant .X

Sortie

$A3^S = RC2$ {RC2 / $A3^S$↑} =



$= fsubs(\mathcal{P}_{A0}, x_1 = V_1, x_2 = V_2 \ldots)$ en flottant .X

conserve A1/A6

(SP) CPSTV

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CPFSTV : MOVEM.L  A1,A6,-(SP)
         BSR      XJPANY  (10) 88    met la table des exposants en A2 = libre
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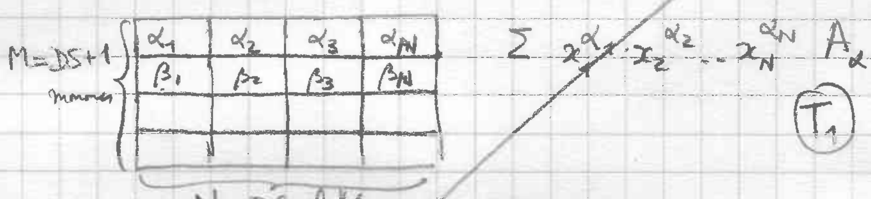


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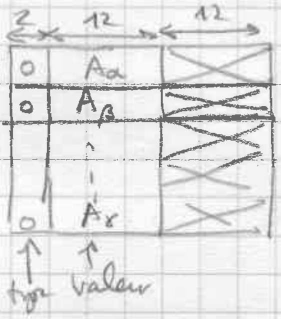
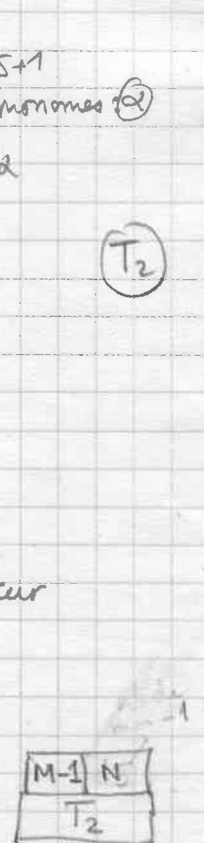
         MOVE.L   A6,-(SP)
         MOVEM    D5/D6,-(SP)        crée la table V des valeurs des D5+1 monomes (α)
         MOVE.L   A0,A3      Q         initialisée avec les coefficients Aα
         LEA      4(A0,D6.W*2),A0
\10 :    MOVE     D5,-(SP)
         BSR      VERA6            type réel
         LEA      (A0,D6.W*2),A0   pointe Aα

         BSR      CPCA   (30) 47   → FP0
         FMOVE.X  FP0,(A6)+
         LEA      12(A6),A6
         MOVE     (SP)+,D5
   ⊗   ( BSR      SLN10
       ( ADD      D0,A0

            BEQ      \16
  erreur ↓  ADDQ     #2,SP ⊗     retour erreur
      ERR : ADDQ     #8,SP
            LEA      RC2,A3
            MOVE     #1,(A3)
            MOVEM.L  (SP)+,A1/A6
            RTS
      \16 : CLR      (A6)+

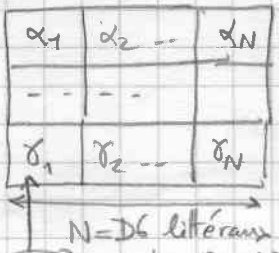
         DBRA     d5,\10
```





(30) CPFSTV: MOVEM.L A1/A6,-(SP)
BSR XJPANY (10)88
MOVE.L A6,A2
⊗ SUB D6,A2
⊗ SUB D6,A2
MOVE.L A2,-(SP) (PT1)
MOVE.L A6,-(SP) (T2)
MOVEM D5/D6,-(SP)
MOVE.L A0,A3 Q
LEA 4(A0,D6.W*2),A0
\10: MOVE D5,-(SP)
BSR VERAG
LEA (A0,D6.W*2),A0 pointe A_α
BSR CPCA (30)47 → FP0
BEQ \16 → ok
↓ erreur
ADDQ #2,SP
⊗ \ERR: ADDQ #8,SP
LEA RC2,A3
MOVE #1,(A3)
⊗ MOVEM.L (SP)+,D0/A1/A6
RTS
\16: CLR (A6)+ type = réel (0)
FMOVE.X FP0,(A6)+ valeur .X
LEA 12(A6),A6
MOVE (SP)+,D5
BSR SLNH0
ADD D0,A0 avance monome
DBRA d5,\10
LEA 2(A3),A0 pointe la littéraux
SUBQ #1,D6 nb de litt - 1 (≠0)

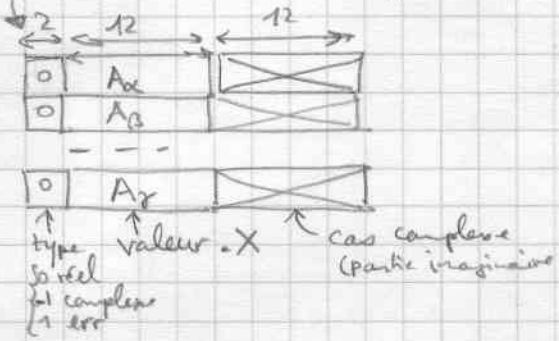
table (T1) des exposants en A2



$Q = \sum_\alpha x_1^{\alpha_1} x_2^{\alpha_2} \cdots \alpha_N^{\alpha_N} A_\alpha$

(PT1) pointe le début du dernier monome

table (T2) des valeurs des M monomes initialisée avec les coefficients A_α



pile :

M-1 | N	
T2	valeurs des monomes
PT1	pointeur sur T1
A1^e = T0	table des valeurs
A6^e = T1	table exposants

boucle sur les littéraux

```
\20: MOVE    (A0)+,D0          xi
⊗    MOVE.L  12(SP),A1         T0
\22: MOVE    (A1)+,D1
     BMI     ERRSIN            substitution incomplète
     CMP     D1,D0
     BEQ     \24               → trouvé vi = [A1]
     LEA     26(A1),A1
     BRA     \22
⊗ \24: MOVE.L 8(SP),A2 (PT4)   crée table (T3) exposants de xi
                               D3 = exposant max
     ADDQ.L  #2,8(SP)          PT4=PT4+2  valeur suivante
     MOVEM   (SP),D1,D2
                  N-1 N
     EXT.L   D2
     ADD.L   D2,D2             D2 = 2*N  (.L)
     MOVEM.L A0/A1/A6,(-SP)    [liste des littéraux / vi / T3]
     MOVE.L  A6,A0             début table
     MOVEQ   #0,D3             exposant maximum
\26: MOVE    (A2),D0
     MOVE    D0,(A6)+          exposant
     CMP     D0,D3   ← MOVE D1,(A6)+   n° exposant
     BC[illegible] \28   ⊗
     MOVE    D0,D3
\28: SUB.L   D2,A2
     DBRA    D1,\26
     MOVE.L  A6,A1             arrêt (-1)
     MOVE    D1,(A6)+          fin de T3
     BSR     VERAE
     BFFFO   D3,0,0,D0
     MOVEQ   #31,D4
     SUB     D0,D4
     BSR     RESORT (30) 107   tri T3
     MOVEM.L (SP)+,A0/A1/A6    A0 = liste des littéraux
                               A6 = T3 ordonnée
                               A1 = vi
```

T3 →

2	2
e_N	N-1
e_{N-1}	N-2
- - -	
e_2	1
e_1	0

```
      LEA  -2(A6),A4          avance sur 1er exposant ≠0
\280: ADDQ #2,A4
      MOVE (A4)+,D3
      BEQ  \280
      BMI  \44                → tous nuls (impossible en principe)
      MOVE.L A1,A2            v_i
      LEA  RC2,A3
      BSR  RCPWR (30) 112     [RC2] = v_i^D3   exposant minimum
      SUBQ #2,A4   ← MOVEQ #0,D5   [RC3] non défini
\29:  MOVE.L A3,A2            A2 = RC2   [RC2] = v^D3

\30:  MOVE (A4),D4
      BMI  \44                → fin des exposants
      CMP  D3,D4
      BNE  \32                → nouvel exposant
      MOVE.L (A4)+,D0
      MULU #26,D0
      MOVE.L 4(SP),A3         T2          LEA ((4.W,SP),D0.L),A3
      ADD.L D0,A3             pointe coef
      BSR  RCMUL              (30) 110    multiplie
      TST  (A3)
      BGT  \ERR
      BRA  \30
\32:  SUB  D4,D3              Calcule v^k'   k'=D4
      NEG  D3                 k'-k
      MOVE.L A1,A2            v
      CMP  #1,D3
      BEQ  \40                cas k'=k+1
      LEA  RC3,A3             cas k'>k+1
      BSR  RCPWR              [A2] = v^(k'-k)   [RC3] = v^D5
\38:  MOVE.L A3,A2            v^k
\40:  LEA  RC2,A3             [RC2] = v^k'
      BSR  RCMUL
      MOVE D4,D3
      BRA  \29

      CMP  D5,D3
      BEQ  \38                → déjà calculé
      MOVE D3,D5
```

```
\44:DBRA  D6,\20   → littéral suivant
                   Somme de M valeurs de la table T2
    MOVE.L  A2,A3      [RC2]
    CLR  (A2)+

    MOVE.L  A6,A0          Copie les parties réelles en A6
    MOVE  (SP),D5   M-1
    MOVE.L  4(SP),A1  (T2)
\46:TST  (A1)+
    BGT  \ERR
\46:MOVE.L  (A1)+,(A6)+
    MOVE.L  (A1)+,(A6)+
    MOVE.L  (A1)+,(A6)+
    LEA  12(A1),A1
    BSR  VERA6
    DBRA  D5,\46

    MOVE  (SP),D5
    BSR  RCTRI (30) 113   tri dans l'ordre croissant de valeurs absolues
                          Mot FP0 = Σ (0 à D5) valeurs
    BNE  \ERR
    FMOVE.X  FP0,2(A3)

repite  MOVE.L  A0,A6
    MOVE  (SP),D4    M-1
    MOVE.L  4(SP),A1   T2
    MOVEQ  #0,D5     nb de parties imaginaires
\48:TST  (A1)+
    BEQ  \50

    ADDQ  #1,D5
    LEA  12(A1),A1
    MOVE.L  (A1)+,(A6)+
    MOVE.L  (A1)+,(A6)+
    MOVE.L  (A1)+,(A6)+
    BRA  \52
\50:LEA  24(A1),A1
\52:DBRA  D4,\48
```

```
        SUBQ #1,D5
X       BMI  \54          → réel
        BSR  RCTR1 (30)113
        BNE  \ERR
        MOVE #-1,(A3)
        FMOVE.X FP0,14(A3)
\54:    ADDQ #8,SP
⊗       MOVEM.L (SP)+,D0/A1/A6
        RTS                ⊗
```