```
> # Set the parameters and functions
  c :='c':
  d :='d':
  u :='u':
  A1 := (366048000 c - 1583568000) u^8 + (3456240000 c^2 - 122016000 d^3 - 12668544000 d) u^7
        + (12407603616 c^3 - 305040000 d^5 - 22536000 d^4 - 46424462280 d^2) u^6 + (264368000 c^7
        + 1050254124 c^5 + 26760322149 c^4 - 777640000 d^6 - 97103253270 d^3) u^5 + (372680000 c^8
        + 36539246310 c^5 - 20336000 d^9 - 1315473740 d^7 - 2110723869 d^6 - 121442975700 d^4) u^4
        + (172342516 c^9 + 36025877424 c^6 - 513469693 d^8 - 5930104710 d^7 - 82836945420 d^5) u^3
        + (93052452 c^9 + 24154360242 c^7 - 4782656457 d^8 - 16218100560 d^6) u^2 + (5766788403 c^8
        + 13283489010 c^7 - 1914049740 d^9) u + 6343852860 c^8 - 1458030192 d^9 :
  print(Output);
  # find Sturm's sequence` `
    for j from 0 by 1 to 2 do
   c := 4 + j/3 . (4001/1000 - 4) :
   d := 4 + (j+1)/3 . (4001/1000 - 4) :
  u :='u':
  S := sturmseq(A1, u);
  signnum := sturm(S, u, 0, 5256/1000);
   with(ArrayTools) :
   Slength := Size(S, 2);
  X := Array(1 .. Slength);
  Y := Array(1 .. Slength);

      for i from 1 to Slength do
   # Find sgn [s_A[1,i](0)]
        u := 0;
        X[i] := signum(S[i]);
   # Find sgn [s_A[1,i](5.256)]
        u := 5256/1000 :
        Y[i] := signum(S[i]);
     end do;
   # show the final results
   print( ['a'[j],'a'[j + 1], sgn(s['A'[1, j]](0)), sgn(s['A'[1, j]](5.256))] = [evalf(c, 5), evalf(d, 5), X,
        Y]) ;
  end do:
```

Output

$$\left[a_0, a_1, sgn\left(s_{A_{1,0}}(0)\right), sgn\left(s_{A_{1,0}}(5.256)\right)\right] = [4., 4.0003, [1, 1, 1, -1, 1, 1, -1, -1, -1], [1, -1, -1, 1, 1, 1, -1, -1, -1]]$$

$$\left[a_1, a_2, sgn\left(s_{A_{1,1}}(0)\right), sgn\left(s_{A_{1,1}}(5.256)\right)\right] = [4.0003, 4.0007, [1, 1, 1, -1, 1, 1, -1, -1, -1], [1, -1, -1, 1, 1, 1, -1, -1, -1]]$$

$$\left[a_2, a_3, sgn\left(s_{A_{1,2}}(0)\right), sgn\left(s_{A_{1,2}}(5.256)\right)\right] = [4.0007, 4.0010, [1, 1, 1, -1, 1, 1, -1, -1, -1], [1, -1, -1, 1, 1, 1, -1, -1, -1]] \quad (1)$$

```
>
```