

NASA Contractor Report 182024

**EXTENSION OF A THREE-DIMENSIONAL
VISCOUS WING FLOW ANALYSIS**

USER'S MANUAL - VISTA 3-D CODE

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**Contract NAS1-18140
MAY 1990**

(NASA-CP-182024) EXTENSION OF A
THREE-DIMENSIONAL VISCOUS WING FLOW ANALYSIS
USER'S MANUAL: VISTA 3-D CODE (Scientific
Research Associates) 106 p

CSCL 01A

N90-22533

Unclassified
07/31/94

63702



National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia 23665-5225

FOREWORD

This User's Manual describes the SRA Three-Dimensional Unsteady Boundary Layer VISTA 3D computer code. The code was developed by Scientific Research Associates, Inc. of Glastonbury, Connecticut.

1.0 INTRODUCTION

This User's Manual describes the SRA VISTA 3D computer code, which solves the compressible time-dependent Boundary Layer equations in both two and three space dimensions using a linearized block implicit solution algorithm with Douglas-Gunn splitting. The code is written for general nonorthogonal coordinate transformations. The code allows a wide variety of boundary conditions, which are treated implicitly within the numerical solution procedure.

This User's Manual is meant to serve as a guide in helping the user make successful runs with the SRA VISTA 3D computer programs. The VISTA 3D code will solve the governing equations, subject to the boundary conditions for a large variety of geometric configurations. The code is constructed so that many necessary input items are set by default. These include boundary conditions, time step control and program control parameters, etc. It is suggested that the novice user maintain default values unless they can be obtained by changing the input parameter via NAMELIST.

The User's Manual is divided into eight parts consisting of: (1) a general description of the VISTA 3D computer code, (2) a brief description of each subroutine and its use, (3) a description of the PARAMETER statements used to dimension array variables in the VISTA 3D code, (4) a description of the logical file units utilized by the VISTA 3D computer code, (5) a description of the NAMELIST input, (6) a description of the grid generation method of Oh, (7) sample JCL and run streams for the steady and unsteady cases, and (8) sample output. For details of the equations solved, boundary conditions utilized and the numerical procedure, the user is referred to Refs. 1-5.

2.0 GENERAL DESCRIPTION

The flow of the code is described below. The main program VISTA3D reads the first NAMELIST INPUT1 and checks for a RESTART. If a RESTART is called for, the RESTART data is read in which consists of all the data in the common blocks and the physical variables in the AC array. Otherwise, the program initializes all variables. Thereafter the second NAMELIST INPUT2 is read in subroutine INPUT which contains input parameters to control the flow of the program.

Once the INPUT2 variables are read in the program goes into the second phase. The airfoil or wing is constructed and grid distributions are set. The geometry

variables are computed and are stored for future use. For the case of a RESTART run, the calculation procedure begins. However, on an initialization run the initial flowfield is computed. The computational procedure is begun by setting the boundary layer edge values obtained from the inviscid data.

At this point the n^{th} level variables consisting of the velocity components and viscosity (RESTART variables if a restart is underway otherwise the initial values) are now transformed into contravariant form, and the derivatives of these variables in subroutine SETUP. Thereafter, for turbulent flow, the mixing length, dissipation and turbulent viscosity are obtained.

Once these values are computed the coefficients of the governing equations are evaluated. The diffusion and convection terms along with the lagged n^{th} level terms are calculated. These terms are used to calculate the finite differences in subroutine QANDR.

Phase three of the computer program sets the boundary conditions and inverts the system of governing equations employing the Linearized Block Implicit method. The boundary layer quantities such as displacement thickness, skin friction, etc. are then computed. For a steady state problem at the end of the time step the solution is checked to see whether a steady state has been reached. If not, the calculation continues until a steady state is reached or the number of time steps is completed. In addition, a RESTART file is written if so indicated by the input variables.

For unsteady problems the procedure parallels the method described above. The primary difference is in the setting of boundary and edge conditions. These are updated from the inviscid data.

A complete description of the numerical methods is given in references 1-4.

3.0 SUBROUTINES

Subroutine

- VISTA3D - Main program controls initialization, restarts and time step loop
- ADI1 - Controls creation of matrix coefficients for ADI sweep in '1' direction
- ADI2 - Controls creation of matrix coefficients for ADI sweep in '2' direction

ADI3 - Controls creation of matrix coefficients for ADI sweep in '3' direction
 ADI3W - Controls creation of matrix coefficients for ADI sweep in '3' direction when wake is present
 ARCLEN - Computes arc length of airfoil surface
 BC - Controls creation of geometric coefficients for boundary condition
 BCRHS - Controls creation of geometric coefficients for source terms that are lagged
 BLKSLV2 - Matrix inventor for 2 x 2 block submatrices
 BLKSLV3 - Matrix inventor for 3 x 3 block submatrices
 BLKSLVG - Matrix inventor for general block submatrices
 BLPROP - Computes boundary layer properties
 CONEQX - Computes matrix coefficients for continuity equation
 CONEQY - Computes matrix coefficients for continuity equation
 CONTQR - Sets QR constants for continuity equation
 CONVECT - Computes convective type terms from governing momentum equation
 DECOD10 - Utility for changing integer to set of binary numbers
 DERIV1 - Sets coefficients for first derivatives
 DERIV14 - Sets coefficients for first derivatives fourth order
 DERIV2 - Sets coefficients for second derivatives
 DERIVX1 - Not used
 DIFFUSE - Computes diffusion type terms from governing momentum equations
 DISFUNC - Computes dissipation function for turbulence model
 EDDYV - Computes eddy viscosity for turbulence model
 EDGCOND - Computes inviscid edge boundary conditions
 ENDCAP1 - Does a boundary condition endcap in '1' direction
 ENDCAP2 - Does a boundary condition endcap in '2' direction
 EXACT - Exact solution of viscous oscillatory flat plate on uniform mesh
 EXEC2D - Controls execution of solution procedure (LBI) in 2 dimensions
 EXEC3D - Controls execution of solution procedure (LBI) in 3 dimensions
 EXEC3DA - Controls execution of solution procedure (LBI) in 3 dimensions at root and tip sections
 FILLET - Computes fillet at trailing edge of wing
 FLOWFLD - Computes initial flow field for steady-state calculation
 FOURIER - Computes four coefficients for unsteady calculation
 FRESTRM - Computes freestream parameter

GAUSS2 - Inverts 2 x 2 block submatrix
GAUSS3 - Inverts 3 x 3 block submatrix
GAUSSG - Inverts general block submatrix
GENBLE - Sets boundary layer edge (height)
GENCOORD - Generates coordinates in X1 and X3 direction at tip and root
GENCOORI - Generates coordinates in X1 and X3 direction at interim sections
GENDIST - Generates grid distributions
GENGRID - Computes coordinates in X1, X2, and X3 directions
GENLINE - Computes connecting lines between interior section of 3-D wing
GENPLOT - Generates 3-D wing plot file
GENPROP - Generates proportionality factor of section to standard airfoil
GENSURFR - Generates surfaces for different airfoil types at root
GENSURFT - Generates surfaces for different airfoil types at tip
GEOM2D - Computes geometric coefficients for 2-D flow field
GEOM3D - Computes geometrix coefficients for 3-D flow field
HEADING - Creates printed heading at top of page
IGETADDR - Obtains address of variable (3-D array)
IGETINC - Obtains increment through an array
INFACE - Not used
INITIAL - Sets initial parameters for calculation
INPUT - Reads NAMELIST parameters and sets default values
INTERP2 - Does 2 point (trapezoidal) interpolation
INTERV - Used with taut spline
LAGGED - Computes lagged terms from momentum equation
LINRPT - Not used
LXOPSUM - Sums up equation coefficients in standard form
MATDUMP - Points out matrix dump
MINV - Inverts block matrix (use with tautspline)
MIXLEN - Computes mixing length for turbulence model
MODELEQ - Computes matrix coefficients for several model equations
MULT - Multiplies 2 general block matrices
MULT2 - Multiplies 2- 2 x 2 block matrices
MULT3 - Multiplies 2- 3 x 3 block matrices
OHGRID - Multiplies grid distribution using method of Oh
OPER2D - Controls computation of equation coefficients for 2-D problem
OPER3D - Controls computation of equation coefficients for 3-D problem

OUTPUT	- Controls printout of variables and flowfields
PHASEL	- No longer used
PPVALU	- Used for taut spline routine
PRINTIT	- Prints out array of variables
PRINTZ	- Prints out Fourier coefficients
QANDR	- Computes Q and R coefficients (finite differences)
REMARK	- Debug printout routine
RESTART	- Controls creation and reading of RESTART files
RUNG	- Runge-Kutta routine used at initialization
SETBV	- Sets boundary conditions
SETTE	- Sets trailing edge location
SETUP	- Sets up contravariant velocity components
SIMPSON	- Integration routine using Simpson's rule
SIZECHK	- Routine to check size of two arguments
SPLOT	- Plotting routine generally used with Fourier Analysis
SQUARIT	- Manipulates matrix to obtain standard form
STSTATE	- Check if steady-state reached
TANHYP	- Grid distribution routine employing hyperbola function
TAUTSP	- Taut spline routine
THERM01	- Computes temperature from other thermodynamic properties
TIMLEFT	- Not used
TIMPLOT	- Plotting routine
TRAPZ	- Integration routine employing trapezoidal method
TRISOLV	- Matrix inversion routine for scalar tridiagonal matrix
UPDATE1	- Routine to set boundary conditions in unsteady flow
UPS3D	- Routine to set boundary conditions in unsteady flow
UPSTRM1	- Routine to set boundary conditions in unsteady flow
VISCL1	- Computes laminar viscosity
WAKE	- Generates wake region at the trailing edge on airfoil
WRPLOT	- Generates plot file

4.0 PARAMETER STATEMENTS

The VISTA 3D computer code makes extensive use of PARAMETER statements for dimensioning FORTRAN variables and for setting data statements. The primary

advantage of the use of PARAMETER statements is the ease with which dimensions of various variables can be changed. The dimensions of many of the variables in the VISTA 3D code are interrelated and hence the redimensioning of the code is not a trivial matter. The use of PARAMETER statements allows these relationships to be coded in an analytic form. Thus the user needs to change only a few PARAMETER statements to redimension the code. Often it has been found that it is economical to have a version of the VISTA 3D code dimensioned for a minimum amount of core required for a specific class of problems. This results in a minimum allocation of computer resources and hence computer charges and often results in improved job turnaround, as the priority algorithms are usually a function of requested storage. The VISTA 3D code has 13 primary PARAMETERS and 18 derived PARAMETERS which will be described below. It should be emphasized at this point that if any of the PARAMETER statements are modified the entire program must be recompiled, as the use of PARAMETER statements results in a direct substitution of the value of a given PARAMETER at compilation time.

DEFINITION OF PARAMETERS

Primary Parameters (Input)

NG1, NG2, NG3	- Dimensions in the X1, X2 and X3 directions, respectively
NVAC	- Number of variables in AC array (Default 16)
NVG2D	- Number of variables in AG array in two dimensions (Default 33)
NVGT3D	- Number of variables in AG array in three dimensions (Default 67)
NVGTYP	- Number of geometry variables that can be printed
NDFERM	- Not used - set to 0
NDIM	- Flag for number of spatial dimensions 2 - Two dimensions 3 - Three dimensions
NBLP	- Number of boundary layer properties (Default 11)
NVPRNT	- Number of print variables (Default 10)
NF1, NF2	- Fourier decomposition dimensions

Secondary Variables (Computed)

NG12	- Number of points in 1-2 plane
NG13	- Number of points in 1-3 plane
NG123	- Total number of points
NGAB	- Maximum number of points in a line in the 1-2 plane
NGAC	- Maximum number of points in a line in the 1-3 plane
NGMX1D	- Maximum one-dimensional length
NGMX2D	- Maximum two-dimensional size, points in the plane
NPAD1	- Padding for odd number of entries in common blocks - used for restart
NPAD2	- Padding for odd number of entries in common blocks - used for restart
NPAD3	- Padding for odd number of entries in common blocks - used for restart
NPAD4	- Padding for odd number of entries in common blocks - used for restart
NPAD5	- Padding for odd number of entries in common blocks - used for restart
NPAD6	- Padding for odd number of entries in common blocks - used for restart
NPAD7	- Padding for odd number of entries in common blocks - used for restart
NVGD	- Total number of variables in AG array
NVDEL	- Index for AC array to obtain the * level variables
NGREST	- Total length of common blocks Plus padding for odd number of entries in COMMON blocks
NDIMACG	- Length of AC and AG arrays for restart purposes For use on CYBER 205 where LOCF is not available to obtain restart length

NOTE:
If common block lengths are changed, then NGREST must be changed.

Parameters for GRID Construction

NCLMX	- Maximum number of cluster points (Default = 3)
NSURFMX	- Maximum number of surfaces for airfoil upper and lower (Default = 2)
NXFIT	- Maximum number of points for tautspline curve fit (Default = 200)

5.0 LOGICAL FILE UNITS UTILIZED BY THE VISTA 3D COMPUTER CODE

The VISTA 3D computer code utilizes up to twenty-seven logical file units during the execution of a run. Most logical file units in the VISTA 3D computer code are referenced through the use of a FORTRAN name rather than through a specific unit number. Thus, if the user desires to change a logical file unit number, this can be accomplished easily. A list of the logical file units utilized by the VISTA 3D computer code, their FORTRAN names, the default value unit number and a brief description of the use of the unit is presented below.

FILES

<u>Number</u>	<u>Name</u>	<u>Purpose</u>
9		Three-dimensional data for Fourier analysis also used to input ONERA M6 geometry data
10	IUREST	RESTART file
11	IUAC12	Internal file for AC array in X1-X2 plane
12	IUAC31	Internal file for AC array in X3-X1 plane
13	IUUC12	Internal file for UC array in X1-X2 plane
14	IUUC31	Internal file for UC array in X3-X1 plane
15	IUACU1	Internal file for ACU1 array in three dimensions
15	IULX11	Internal file for LX1 operators
16	IUACU2	Internal file for ACU2 operators in three dimensions
16	IULX22	Internal file for LX2 operators
17	IUACU3	Internal file for ACU3 operators in three dimensions
17	IULX33	Internal file for LX3 operators

18	IUACMU	Internal file for ACMU array in three dimensions
18	IUSN12	Internal file for source term in X1-X2 plane
19	IUUDUM	Internal file for temporary storage of three-dimensional array
20	IURHS3	Internal file for source term in three dimensions
21	IUDPDX	Internal file for pressure gradient terms
22	IULC12	Internal file for continuity equation in 1-2 plane
23	IUACRO	Internal file for density array in three dimensions
24	IULC33	Internal file for continuity equation in 1-3 plane
29		Unsteady inviscid edge data
30		Three-dimensional boundary layer property data for Fourier analysis
31	IUAG31	Internal file for geometry array in X3-X1 plane
32	IUAG12X	Internal file for geometry data in X1-X2 plane
33	IUAG31X	Internal file for geometry data in X3-X1 plane
40	IUAG12	Internal file for geometry array in X1-X2 plane
44		Steady inviscid edge data

6.0 NAMELIST INPUT

\$INPUT 1

Name	Description
ICYB205	- CYBER 205 flag for restart - to automatically determine length of common blocks (default = 1)
IRESTRT	- Restart flag
JPLANES	- Number of 3-D planes for restart (Default = 1)
LRESTART	- Time step flag to indicate when a RESTART is to be created
NFINP	- Location of RESTART file that is read in (0 = last file)
NFOUT	- Location of RESTART file to write out (0 = last file)

\$INPUT 2

AKSTAR - Turbulence Model Constant = 0.4
ALAMDA - Turbulence Model Constant = 0.9
AMEGA - Frequency parameter for oscillating flat plate if it is < 0 then
it is given in Hz; if > 0 then it is given in radians/sec;
AMINF - Free stream Mach number
AMPL - Amplitude of sinusoidal oscillation of free stream velocity
AVANDR - Van Dries constant = 26.0
AVISC - Artificial dissipation parameter
BETA - Parameter for centering of time step
BETABL - Constant for computing upstream turbulent velocity profile
CHARACL - Characteristic length
CFT - Skin function constant for computing upstream turbulent velocity
profile
CLW1 - Logarithmic wall function constant
CLW2 - Logarithmic wall function constant
CSTMIN - Start of turbulence section (Default = 0.0)
DAMPG - Parameter for controlling grid stretching via a sinh
transformation about the point X0 = XCENTR(K) where K = 1, 2, 3.
The larger the value of T2 = DAMPG(K) the greater the clustering
about X0. T2 must be > 1.0 (Default = 0)
DELDT - Factor to increase or decrease time step under IDTADJ = 1
option. Default = 1.25
DELTAT - Boundary layer thickness at upstream profile
DT - Initial nondimensional time step. For unsteady case if DT < 0
then DT is given in degrees of cycle
DTMAX - Maximum nondimensional time step for this run
DTMIN - Minimum nondimensional time step for this run
ETAEDG - Boundary layer edge location for model problems used in
testing code (used in INITIAL)
ETAINF - Boundary layer edge location for model problems used in
testing code (used in INITIAL)
EXPC - Upstream profile parameter for model problems used in
testing code (used in INITIAL)
GAMMA - Ratio of specific heats

- GRID - Parameter for controlling grid stretching via a tanh transformation. Dimensioned as GRID(J,K) where J = 1 is bottom or left boundary and j = 2 is top or right boundary and K is the direction (K = 1, 2, 3). T1 = GRID(J,K) and T2 = GRID(J,K).
- Limits of T1 and T2 are:
- 1 < T1 < 0 and 0 < T2 < 1
 - If T1 = 0 and T2 = 0 Uniform grid spacing
 - If T1 = 0 and T2 > 0 Clustering near "2" boundary
 - If T1 < 0 and T2 = 0 Clustering near "1" boundary
- Default is 0.0
- HOWARTH - Edge velocity constant for Howarth flow model problems (Default = 1.0)
- IBLAYER - Parameter for making boundary layer approximations in given direction, dimensioned as IBLAYER(IDIR)
 - 0 - No boundary layer assumptions (default)
 - 1 - Boundary layer assumptions
- IC - Initial condition parameter
 - 1 - Runge Kutta Falkner Skan solution
 - 2 - Linear velocity profile
 - 3 - Read from tape
 - 4 - Unused
 - 5 - Log law profile
- ICART - Flag for Cartesian coordinates
- ICCOUPLE - Equation coupling parameter
 - 1 - Uncoupled
 - 2 - Two equations coupled
 - 3 - Three equations coupled
- IDISBL2 - Two-dimensional dissipation function flag (Default = 1)
- IDIM - Dimensions in X1, X2 and X3 directions
- IDIMEN - Indicates two or three dimensional problem (Default = 2)
- IDT - Current time step number
- IDT1 - Beginning time step number for unsteady calculation
- IDT2 - Beginning time step number for periodic sampling
- IDT3 - Last time step number for periodic sampling

IDTADJ - Time step control sentinel

- 0 - Constant DT is used for the entire run
- 1 - Time step is adjusted by the factor DELDT based on specified changes PCNT1 and PCTN2
- 2 - Time step is cycled between the specified values DIMIN and DTMAX using an acceleration parameter concept. A sequence of NTSTEP time steps is used under this option

ID1A - First derivative flag (order) at the '1' boundary

ID1B - First derivative flag (order of approximation) at the '2' boundary

ID14TYP - Fourth order first derivative flag

IENDCP1 - End cap flag for first sweep

IENDCP2 - End cap flag for second sweep

IEQBC - Boundary condition flag - dimensioned as IEQBC(IEQ, IDIR, ILOOP, ISIDE) where

- IEQ = momentum equation number 1 or 2
- IDIR = direction 1, 2 or 3
- ILOOP = loop number 1, 2, 3 or 4
- ISIDE = left or right or top or bottom sides (1 or 2)

IFREQ - Print frequency parameter. Dimensioned as IFREQ(K)

- K = 1, 2, 3, 4 K = 1, 2, 3 signifies X-K direction
- K = 4 signifies temporal print frequency

IGASLAW - Gas law type

- 1 - Perfect gas
- 2 - Other as yet unspecified

IGASTYP - Gas type

- 1 - Air
- 2 - Nitrogen

IHSTAG - Enthalpy option

- 0 - Static enthalpy
- 1 - Stagnation enthalpy
- 2 - Constant stagnation enthalpy (default)

IMDMP - Matrix dump indicator

- 0 - No matrix dump
- 1 - Coefficient dump only
- 2 - Coefficient dump and back substitution print (default)

IMODEL - Model problem parameter used in testing the code or flag to signify type of problem under consideration
IMUSKER - Skin turbulence model parameter
INCOMPR - Incompressible flow parameter

- 0 - Compressible flow (default)
- 1 - Incompressible flow

INCORE - Logical variable indication whether variables are kept incore or are written onto disk.
INTPRNT - Intermediate print flag (Default = 0 do not print)
INTRFC - Interface print flag (Default = 0)
IORDER - Orders of accuracy of finite difference scheme in each of the three directions
IORTHOG - Indicates orthogonal or nonorthogonal problem
IOUT - Flag which controls variables that are printed out
IPEROD - Not used (set to 0)
IPLOT - Plot flag
IPRINTF - Print flag for initial flow field

- 0 - Do not print
- 1 - Do print

IPRINTG - Print flag for geometry print

- 0 - Do not print
- 1 - Do print

IPRINTL - Print flag for final flow field

- 0 - Do not print
- 1 - Do print

IPRINTX - Print flag for final flow field

- 0 - Do not print
- 1 - Do print

IPRNTZ1 - Print flag (unused)
IPRNTZ2 - Print flag (unused)
IPRNTZ3 - Print flag (unused)
IPRINT1 - Print flag for first time step (Default = 1)
PRNT24 - Print flag for unsteady flow (cf 1)
IRUN - Calculation run parameter

- 0 - No - do not run code
- 1 - Yes - run code; used when checking out initialization

ISCHEME - Flag for type of numerical solution scheme
 1 - First order upwind differencing
 2 - Second order central differencing
 3 - Allen-Southwell exponential scheme
 4 - Fourth order generalized OCI scheme
 5 - Fourth order standard OCI scheme
 6 - Not used
 7 - Not used
 8 - First order boundary layer assumption
 9 - Second order central differencing with artificial dissipation

ISTEADY - Steady or unsteady flag
 0 - Unsteady
 1 - Steady (Default)

ISUMPR - Not used

ITPLT - Time step to create plotfile (Default = 1)

ITRBLOC - Flag for turbulent flow
 0 - Laminar throughout
 1 - Turbulent throughout

ITRBMDL - Turbulence Model
 0 - Laminar flow
 1 - Single layer
 2 - Two layer

ITSMTH - Smoothing parameter

ITWCNST - Parameter for constant wall temperature on body

IUPD - Type of upstream BC for unsteady flow (cf UPDATE1)

IVSCLAW - Laminar viscosity gas law

NVAGPRT - Geometry print flag

INPUT 3

ICGRID - 0 No C-grid
 - 1 C-grid upper surface
 - 2 C-grid lower surface
 - 3 C-grid upper and lower surfaces
 - 4 C-grid entire surface

IWAKE - 0 - No wake
 - 1 - wake
 J1LE(1) - X1 Grid point location of upstream inflow boundary on upper surface
 J1LE(2) - X1 Grid point location of upstream inflow boundary on lower surface
 J1TE(1) - X1 Grid point location of trailing edge on upper surface
 J2TE(2) - X1 Grid point location of trailing edge on lower surface
 J2OPT - Not used
 JBCD1 - Type of first derivative boundary condition
 1 - first order 2 point
 2 - second order 3 point
 3 - fourth order 5 point
 JBCD2 - Type of second derivative boundary condition
 1 - first order 3 point
 2 - second order 4 point
 3 - fourth order 6 point
 JCF - J1 location for skin friction coefficient for Fourier Analysis
 JDIM - Not used
 JDMP1 - X1 location for matrix dump
 JDMP2 - X2 location for matrix dump
 JDMP3 - X3 location for matrix dump
 JDSTR - J1 location for displacement thickness for Fourier Analysis
 JFREQ - Plot frequency parameter. Dimensioned as JFREQ(K)
 K = 1, 2, 3, 4. K = 1, 2, 3 Signifies X-K direction
 K = 4 signifies temporal plot frequency
 JJTM - Not used
 JMDMP - Time step interval at which matrix dump is provided. (Default = NT)
 JSUMPR - Not used
 JTHTET - J1 location for momentum thickness for Fourier Analysis
 JUEDGE - Not used
 JUP - J1 location for edge velocity for Fourier Analysis
 J1MAXP1 - Maximum number of points in X1 direction
 J1MINM1 - Minimum number of points in X1 direction (Default = 1)
 J2MAXP1 - Maximum number of points in X2 direction

J2MINM1 - Minimum number of points in X2 direction (Default = 1)
 J3MAXP1 - Maximum number of points in X3 direction
 J3MINM1 - Minimum number of points in X3 direction (Default = 1)
 J1SK - X1 location where periodic sampling is done
 KDIM - Not used
 KMDMP - Initial time step at which matrix dump is provided. (Default is first time step)
 KRATIO - Not used
 K1SK - J1 location in the J2 plane where Fourier Analysis is desired
 LINPR - Nonlinear pressure-temperature parameter
 0 - Density computed from nonlinear relationship (equation of state)
 1 - Density is computed from time-linearized pressure-temperature relationship
 LVAR - Parameter for the number of flow variables printed
 NCOEFF - Order of Fourier approximation
 NPLVAR - Number of variables to plot
 NSPUC - Not used
 NT - Number of time steps to be taken. (Default = 0)
 NTCYCL - Time step number during current run at which time step cycling option (IDTADJ = 2) is to be initiated
 NTPLOT - Number of time steps at which plot file is created
 NTSTEP - Number of time steps for cycling option used for accelerating convergence. (Default = 3)
 NTSTS - Time interval at which steady state test is conducted
 PCNT1 - Used for steady state problems to vary the time step, thereby controlling convergence. If maximum relative change in any flow variable is less than PCNT1, the time step is increased to DELDT*DT (IDTADJ = 1 Option). (Default = .04)
 PCNT2 - If maximum relative change in any flow variable is greater than PCNT2, the time step is decreased to DT/DELDT (IDTADJ = 1 option). (Default = .06)
 PINF - Free stream undisturbed static pressure
 PRL - Laminar Prandtl number
 PRT - Array of turbulent Prandtl number
 PSTAG - Stagnation pressure

P1 - Fourth order OC1 parameter
 P2 - Fourth order OC1 parameter
 REINF - Reynolds number per unit length. If given as input, then P or T
 must be given
 RINF - Free stream gas constant
 SLOPEW - Constant to control skin friction at wall for laminar model
 problem (cf INITIAL)
 SL1 - Sutherland law constant
 SL2 - Sutherland law constant
 SSEPS - Steady state convergence criteria. Default = .001
 THREEED - Logical variable for three-dimensional mode of operation of the
 code
 False - 2-D mode (default)
 True - 3-D mode
 TINF - Free stream temperature
 TRNSFMT - Transformation type
 0 - No transformation
 1 - Logarithmic (Cebeci)
 2 - Hyperbolic function (Roberts)
 3 - Oh grid
 TSTAG - Free stream stagnation temperature
 TWDT5 - Wall temperature ARAYIO if constant on body
 TWOD - Logical flag used to specify two-dimensional mode of operation
 of the code
 False - 3-D Mode
 True - 2-D Mode (Default)
 UANGLE - Flow angle for model problem
 UZERO - Amplitude of sinusoidal unsteady oscillation
 VELMIN - Minimum velocity parameter for steady state evaluation
 WWEDGE - Edge velocity parameter for steady state evaluation
 XCENTR - Parameter for controlling grid stretching via a sinh
 transformation. X0 = XCENTR(K) (K = 1, 2, 3) is the
 nondimensional value of the XK-coordinate about which the
 clustering is centered. (Default = 0.5)
 XGMAX - XGMAX(K) is the nondimensional maximum value of X in the K
 direction.

XGMIN	- XGMIN(K) is the nondimensional minimum value of X in the K direction. (Default = 0.0)
XTRANS	- Array of X locations of transition onset
XTURB	- Array of X locations of turbulence onset
X1MAXP1	- Phase angle at upstream boundary for unsteady flow in skin friction
X1MINM1	- Amplitude constant at upstream boundary for unsteady flow for skin friction
X2MAXP1	- Phase angle for displacement thickness for unsteady problems
X2MINM1	- Amplitude constant for displacement thickness for unsteady problem
X3MAXP1	- Not used
X3MINM1	- Not used
YDDLT	- Flag to determine boundary layer edge 0 - Constant height above wing 1 - by formula 2 - read in from NAMELIST input
Y3BLE	- Boundary layer edge as a function of J1

INPUT Requirements: for CGRID, Wake and Loop Parameters

ICGRID	IWAKE	J1LE(1)	J1TE(1)	J1LE(2)	J1TE(2)
0	0	NO	NO	NO	NO
0	1	NO	YES	NO	NO
1	0	YES	NO	NO	NO
1	1	YES	YES	NO	NO
2	0	NO	NO	YES	NO
2	1	NO	NO	YES	YES
3	0	YES	NO	YES	NO
3	1	YES	YES	YES	YES
4	0	YES	NO	NO	NO
4	1	YES	YES	NO	YES

DERIVED VARIABLES

		LOOPMIN	LOOPMAX	LOOPSKP
Upper surface to trailing edge		1	1	1
Upper surface and wake		1	3	2
Lower surface to trailing edge		2	2	1
Lower surface and wake		2	4	2
Upper and lower surfaces to trailing edge		1	2	1
Upper and lower surfaces and wake		1	4	1
Entire C-grid surface to trailing edge		1	2	1
J1LMNM1(LOOP, IDIRL)	- Minimum bound of X1 grid point			
J1LMXP1(LOOP, IDIRL)	- Maximum bound of X1 grid point			
J1STEP(LOOP)	- Step, either +1 or -1			
LOOP	- 1 Upper surface above body			
LOOP	- 2 Lower surface below body			
LOOP	- 3 Wake 'CENTER' line (J1TE(1) - J1MAXP1)			
LOOP	- 4 Wake 'CENTER' line (J1MINM1 - J1TE(2))			

GEOMETRY NAMELISTS

Please refer to Figure 2 for explanation of dimensions.

&GRID1

NSURF	- Number of airfoil surfaces
XINCAF	- Increment along surface for use by Tautspline
XINCFI	- Increment in fillet region for use by Tautspline
XINCWK	- Increment in wake for use by Tautspline
XOFFSET	- Distance upstream where fillet region begins
XENDAF	- Trailing edge of airfoil
XENDWK	- Location where wake ends
RADMIN	- Minimum radius of fillet region

XBMAX	- Maximum distance where fillet is tangent to wake centerline
IPRINT	- Print flag
IPLOT	- Plot flag
IFILLET	- Fillet flag (true or false)
TH	- Airfoil maximum thickness (NACA00XX)
IAIRFOIL	- Airfoil description flag (1 - NACA00XX, 2 - ONERAM6)
NAF	- Number of airfoil sections in spanwise direction for 3-D wing
WINGSPAN	- Span of 3-D wing
CHORD1	- Root section chord length of 3-D wing
AFLEN	- Nondimensional root section chord length
SWEEPLE	- Leading edge sweep angle (degrees)
SWEEPTE	- Trailing edge sweep angle (degrees)

&OHROOT and \$OHTIP

CLPX	- Array of cluster point locations in computational space dimensioned as CLPX(N, IDIR, ISRF)
CLPY	- Array of cluster point locations in physical space dimensioned as CLPY(N, IDIR, ISRF)
NSLOPE	- Number of slope constraints to be imposed (.LE. NCLUST+2) dimensioned as NSLOPE(IDIR, ISRF)
XSLOPE	- Array of grid points where slope constraints are imposed dimensioned as XSLOPE(N, IDIR, ISRF)
SLOPE	- Array specifying slope values at the above grid points dimensioned as SLOPE(N, IDIR, ISRF)
ETAP	- Array of pivot points for the complementary error functions dimensioned as ETAP(N, IDIR, ISRF)
ALPHA	- Array of wave lengths for the complementary error functions dimensioned as ALPHA(N, IDIR, ISRF)
NCLUST	- Number of cluster points, dimensioned as dimensioned as NCLUST(IDIR, ISRF)
IPRT	where IDIR = direction (1, 2, or 3) ISRF = surface (1 - upper, 2 - lower) N = number of cluster points

7. GRID DISTRIBUTION

Subroutines TANHYP and OHGRID are used to distribute grid points on the boundaries of the physical domains by the use of a hyperbolic relationship between physical and computational space or by the method of Oh (Ref. 5) which uses error function for the same purpose. The hyperbolic tangent method is useful when the user wants to pack grid points near boundaries. This is done by the selection of the packing parameter GRID appropriate to the given surface. Values of GRID vary from -1 to 0 and from 0 to 1 with 0 corresponding to equal spacing. As values approach 1 the packing rate increases at the boundary. The method of Oh is considerably more general than the TANHYP method and is discussed below. Input variables required for the method of Oh are CLPX, CLPY, NCLUST, ETAP, ALPHA and SLOPE, which are discussed in the NAMELIST input section. Below is given a description of this method.

The distribution of grid points on boundaries is accomplished by the use of a transformation technique developed by Oh and described in Ref. 5. If y and η designate the independent variables in physical and computational (grid point) space, respectively, the transformation function

$$f = \frac{dy}{d\eta} \quad (1)$$

can be integrated to yield

$$y(\eta) = \int_{\eta_{\min}}^{\eta} f(\eta) d\eta + y_{\min} \quad (2)$$

A convenient transformation function is composed of a series of N complementary error functions of the form

$$f(\eta) = \frac{dy}{d\eta} = \beta_0 + \frac{1}{2} \sum_{j=1}^N \left\{ \operatorname{erfc} \left[\frac{\gamma}{\alpha_j} (\eta - \eta_{pj}) \right] - \left[1 + \operatorname{sign}(\alpha_j) \right] \right\} \beta_j \quad (3)$$

The j^{th} complementary error function is centered in computational space at location η_{pj} (which is referred to as a pivot point), and α_j is the width in computational space in which 90% of the grid size variation takes place. At

computational space location η_{p_j} , the values of $f(\eta)$ will assume a local maximum.

γ is a convenient scaling constant for α_j ($\gamma = 1.163 \times 2 = 2.326$; $\text{erfc}(1.163) \approx 0.10$). In the limit as $\alpha_j \rightarrow 0$, β_j is the j^{th} step height for pivot j , i.e., the difference in grid spacing on either side of η_{p_j} .

Substitution of Eq. (3) into Eq. (2) and integration yields

$$y - y_{\min} = \beta_0[n-n_{\min}] + \sum_{j=1}^n \frac{1}{2} \left\{ \frac{a_j}{\gamma} [\theta_j(\eta) = -\theta[\eta_{\min}]] \right. \\ \left. - [1 + \text{sign}[\alpha_j]] [\eta - \eta_{\min}] \right\} \beta_j \quad (4)$$

where

$$\theta_j(\eta) = \frac{\gamma}{\alpha_j} [\eta - \eta_{p_j}] \text{erfc} \left[\frac{\gamma}{\alpha_j} [\eta - \eta_{p_j}] \right] - \frac{1}{\sqrt{\pi}} e^{-[\gamma/\alpha_j(\eta - \eta_{p_j})]^2} \quad (5)$$

The technique used in this study is to constrain the values of the physical coordinate, y_{c_k} , at specific values of the computational coordinate, η_{c_k} . At interior points the η_{c_k} 's are referred to as interior cluster points. At the two end lines, there exist pairs of computational and physical points η_{\min} , y_{\min} , and η_{\max} , and y_{\max} which are referred to as end cluster points. In this formulation (see Fig. 1), two pivot points are associated with each interior cluster point and one pivot point is associated with each end cluster point ($\eta_{p_{\min}}$ and $\eta_{p_{\max}}$). Thus, if there are k interior cluster points, the total number of pivot points is $N = 2k + 2$. To determine the functional relationship $y(\eta)$ described by Eq. (4), requires (if the values of η_{p_j} and α_j are prescribed) that the values of the $(N + 1)$ β 's in that equation be calculated. Both Eq. (3) and Eq. (4) are linear equations with respect to the β 's. By constraining the values of the physical coordinates at the interior and end cluster points, $(k + 1)$ linear independent equations in the β 's are obtained. By further constraining the values of the slope, $f(\eta)$, at the interior and end cluster points, a further $k + 2$ linear independent equations in the β 's are obtained and hence there are now $2k + 3$ linear independent equations for the $(N + 1) = (2k + 3)$ β 's. This system is

solved for the β 's by standard Gaussian elimination techniques and hence all the constants of Eq. (4) are uniquely determined.

There are several advantages to the use of the series of complementary error functions:

- (1) $f(\eta)$ is positive, finite and non-zero; i.e., y will always increase with increasing η ;
- (2) $f(\eta)$ is continuous and successively differentiable and integrable; and
- (3) if the pivot points are spaced at a greater distance (in computational space) than $\alpha/2$ from each other, the complementary error functions will have minimal interaction. Thus, the width and location of a complementary error function can be changed without affecting other complementary error functions.

The strategy for using this technique is as follows:

- (1) Determine the location of the interior and end cluster points in physical and computational space. The criteria used in determining these locations is usually based upon the physical processes that need to be resolved and the number of grid points needed to resolve those processes;
- (2) The pivot points, η_p_j , and the corresponding bandwidth parameters, α_j , are then input. Usually the interior pivot points are located on either side of the cluster points. If it is desired to have negligible interaction between the complementary error functions, the η 's and α 's will be chosen such that no η will be located within $\alpha/2$ grid points of each other;
- (3) Slopes are then chosen at each interior and end cluster point. Again these are usually determined from physical considerations. The slope constants and cluster points can then be refined by running Oh grid in a test mode.
- (4) Once this interaction process has been completed with the slope constraints (because of item 3 in the advantages of this method that process should be rapid), slight modification of the values of the η 's and α 's should result in the desired grid point distribution.

Computation of Trailing Edge Geometry

If the trailing edge of an airfoil terminates with a sharp angle it will cause a singularity to exist in the computational domain. Hence in order to eliminate this difficulty a cusp is added to the trailing edge. This is accomplished by

introducing a circular fillet that is both tangent to the airfoil and the wake centerline. The radius is chosen to be sufficiently large so that the center of the circle lies outside the computational domain. In addition, the other dimensions are constrained to allow for a minimum sized cusped region. The definitions of the variables in Figure 2 are described under the section dealing with geometry NAMELIST variables.

REFERENCES

1. Weinberg, B.C. and Shamroth, S.J.: Three-Dimensional Unsteady Viscous Flow Analysis over Airfoil Sections, NASA CR-172368, 1984.
2. Weinberg, B.C. and McDonald, H.: Solution of Three-Dimensional Time Dependent Viscous Flows, Part 2: Development of the Computer Code, NASA CR-166565, Part 2, 1980.
3. Briley, W.R. and McDonald, H.: On the Structure and Use of Linearized Block Implicit and Related Schemes. SRA Report R78-3, 1978, Journal of Comp. Physics, Vol. 34, No. 1, pp. 54-72, January 1980.
4. Briley, W.R. and McDonald, H.: Solution of the Multidimensional Compressible Navier-Stokes Equations by a Generalized Implicit Method. Journal of Comp. Physics, Vol. 24, pp. 372-397, August 1977.
5. Oh, Y.H.: An Analytical Transformation Technique for Generating Uniformly Spaced Computational Mesh. NASA CP-2166, 1980, pp. 385-398.

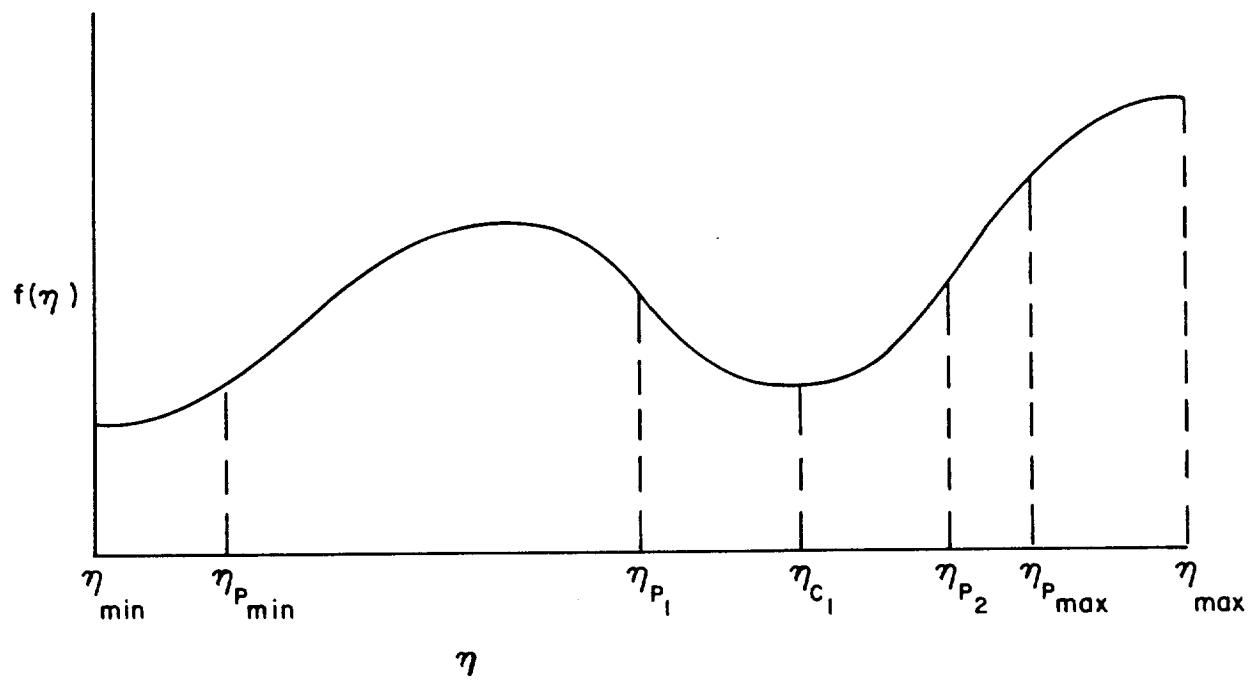


Figure 1 - Oh Grid Notation.

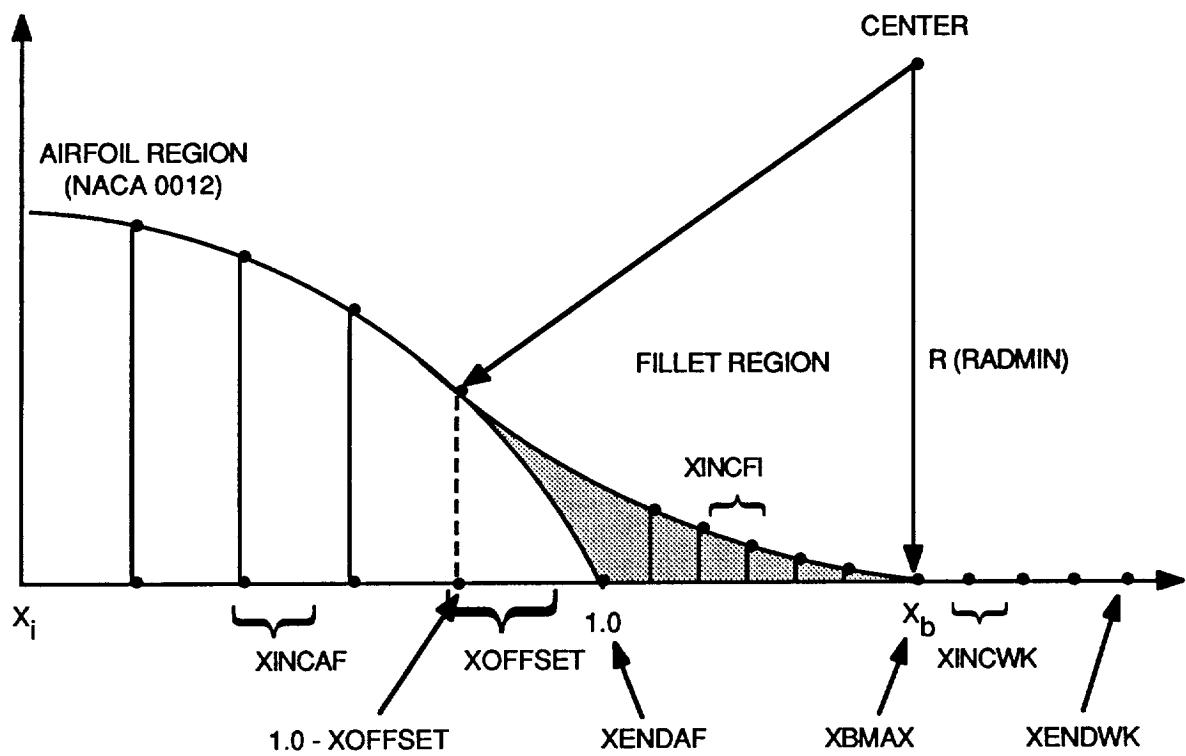


Figure 2 – Construction of Fillet Region at Trailing Edge.

JCL - Steady State Case

CWNOS,T100,CM100000.
 SER,un,pw.
 HARGE,ac,LRC.
 ET,OLDPL=plib.
 PDATE(C=COMP2D,L=A1234)
 OVPS(INPUT,C6UD=COMP2D,UN=un,PW=pw,AC=ac)
 AYFILE.
 XIT.
 *EOR
 />>>>>>>>>>> UPDATE MODS <<<<<<<<<<
 /*****
 /
 / CYBER RUN STREAM
 /
 / 0012 AIRFOIL --- UINF = 694. FT/SEC
 / SECOND ORDER BOUNDARY LAYER ASSUMPTIONS
 / BEGIN CALCULATION AT X = 0.1 FEET (118 X 49) GRID
 / REINF = .48E+07 OH GRID
 / ANGLE OF ATTACK IS 0. DEG
 / SECOND ORDER STEADY CASE AT T = 0
 /*****
 *EOR
 CWVPS.
 SER(U=un,PA=pw,AC=ac)
 ESOURCE(TL=2999,WS=24960,LP=195,NT=0,JCAT=MDBAT)
 ELIVER(R/006 SS VPS32)
 ILES(PRI=*)
 FLINK(TAPE44,ST=RHZ,DD=C6,JCS="USER,un,pw.", "CHARGE,ac,LRC.",
 GET,datafile.)
 TTACH,COMP2D.
 FLINK(XXXX,ST=RHZ,DD=UU,JCS="USER,un,pw.", "CHARGE,ac,LRC.",
 ATTACH,binlib.)
 WITCH,XXXX,RT=W.
 ATTACH(FORT77X)
 TN200(I=COMP2D,L=0,B=BINARY/250,OPT=1)
 LE(M=NEWBL,I=BINARY,XXXX)
 EQUEST,TAPE10/138,RT=W.
 EQUEST,TAPE5.
 OPYL,INPUT,TAPE5.
 OPYL,TAPE5,OUTPUT.
 EWIND,TAPE5.
 OAD,NEWBL,CN=G0/25000,GRLPALL=.
 0.
 WITCH,TAPE10,restart-file-out.
 ONOS(Z,UUUD=restart-file-out,JCS="un","pw","ac")
 AYFILE,DAYVPS.
 ONOS(Z,C6UD=DAYVPS,JCS="un","pw","ac")
 XIT.
 AYFILE,DAYVPS.
 ONOS(Z,C6UD=DAYVPS,JCS="un","pw","ac")
 XIT.
 *EOR PROVIDE NAMELIST INPUT HERE
 *EOR
 *EOI

JCL - Unsteady Case

CWNOS,T100,CM100000.
 SER,un,pw.
 HARGE,ac,LRC.
 ET,OLDPL=plib.
 PDATE(C=COMP2D,L=A1234)
 DVPS(INPUT,C6UD=COMP2D,UN=un,PW=pw,AC=ac)
 AYFILE.
 XIT.
 *EOR
 / >>>>>>>>>> UPDATE MODS <<<<<<<<<<
 /
 / ****
 / CYBER RUN STREAM **
 / **
 / 0012 AIRFOIL --- UINF = 694. FT/SEC **
 / SECOND ORDER BOUNDARY LAYER ASSUMPTIONS **
 / BEGIN CALCULATION AT X = 0.1 FEET (118 X 49) GRID **
 / REINF = .48E+07 OH GRID **
 / ZERO MEAN PITCH ANGLE 1 DEG AMPLITUDE REDUCED F .0475 **
 / SECOND ORDER UNSTEADY CASE **
 / ****
 *EOR
 CWVPS.
 SER(U=un,PA=pw,AC=ac)
 ESOURCE(TL=2999,WS=24960,LP=195,NT=0,JCAT=MDBAT)
 ELIVER(R/006 SS VPS32)
 ILES(PRI=*)
 FLINK(TAPE10,ST=RHZ,DD=UU,JCS="USER,un,pw.", "CHARGE,ac,LRC.",
 ATTACH,restart-file-in.")
 WITCH,TAPE10,RT=W.
 FLINK(TAPE29,ST=RHZ,DD=C6,JCS="USER,un,pw.", "CHARGE,ac,LRC.",
 GET,datafile.")
 TTACH,COMP2D.
 FLINK(XXXX,ST=RHZ,DD=UU,JCS="USER,un,pw.", "CHARGE,ac,LRC.",
 ATTACH,binlib.")
 WITCH,XXXX,RT=W.
 ATTACH(FORT77X)
 TN200(I=COMP2D,L=0,B=BINARY/250,OPT=1)
 LE(M=NEWBL,I=BINARY,XXXX)
 EQUEST,TAPE5.
 DPYL,INPUT,TAPE5.
 DPYL,TAPE5,OUTPUT.
 EWIND,TAPE5.
 OAD,NEWBL,CN=GO/25000,GRLPALL=.
 O.
 WITCH,TAPE10,restart-file-out.
 ONOS(Z,UUUD=restart-file-out,JCS="un","pw","ac")
 AYFILE,DAYVPS.
 ONOS(Z,C6UD=DAYVPS,JCS="un","pw","ac")
 XIT.
 AYFILE,DAYVPS.
 ONOS(Z,C6UD=DAYVPS,JCS="un","pw","ac")
 XIT.
 *EOR
 PROVIDE NAMELIST INPUT HERE
 *EOR
 *EOI

Namelist Input - Steady State Case

NPUT1

ICYB205 = 1,
IRESTR = 1,
JPLANES = 1,
LRESTR = 100,
NFINP = 0,
NFOUT = -1

ND

NPUT2

AMINF = 0.599,
BETA = 1.0,
BETABL = -1500., -1500.,
CHARACL = 1.0,
DAMPG(3) = 0.,
DAMPG(1) = 0.,
CFT = 0.00410, 0.00410,
DELTAT = 0.0020, 0.0020,
CLW1 = 2.439,
CLW2 = 5.0,
DT = 0.010,
DTMAX = .15,
DTMIN = 0.005,
GRID(1,3) = -.99992,
GRID(2,3) = 0.,
GRID(1,1) = -.87,
GRID(2,1) = .7,
IBLAYER(1) = 1,
IC = 5,
IDIM = 118, 1, 49,
IDIMEN = 2,
IDISBL2 = 1,
IDTADJ = 1,
ID1A(1) = 2,
ID1B(1) = 2,
IENDCP1 = 1,
IEQBC(1,1,1,1) = 1,
IEQBC(1,1,1,2) = 13,
IEQBC(1,1,2,1) = 1,
IEQBC(1,1,2,2) = 13,
IEQBC(1,1,3,1) = 1,
IEQBC(1,1,3,2) = 13,
IEQBC(1,1,4,1) = 1,
IEQBC(1,1,4,2) = 13,
IEQBC(1,3,1,1) = 1,
IEQBC(1,3,1,2) = 1,
IEQBC(1,3,2,1) = 1,
IEQBC(1,3,2,2) = 1,
IEQBC(1,3,3,1) = 1,
IEQBC(1,3,3,2) = 1,
IEQBC(1,3,4,1) = 1,
IEQBC(1,3,4,2) = 1,
IEQBC(3,3,1,1) = 1,
IEQBC(3,3,1,2) = 7,
IEQBC(3,3,2,1) = 1,
IEQBC(3,3,2,2) = 7,
IEQBC(3,3,3,1) = 7,
IEQBC(3,3,3,2) = 7,
IEQBC(3,3,4,1) = 7,
IEQBC(3,3,4,2) = 7,

IREQ(2) = 40,
IREQ(4) = 40,
IMDMP = 0,
IMODEL = 4,
IMUSKER = 1,
INCOMPR = 0,
INCORE = .T.,
INTPRNT = 0,
INTRFC = 0,
IOUT = 0000010000,
IPRINTF = 1,
IPRINTL = 0,
IPRINTG = 0,
IPRINTX = 0,
IPRINT1 = 0,
IPRNTZ1 = 0,
IPRNTZ2 = 0,
IPRNTZ3 = 0,
ISCHEME(1) = 8,
ISCHEME(3) = 2,
ISTEADY = 1,
ITRBLOC = 1,
ITRBMDL = 1

ND

NPUT3
ICGRID = 3,
IWAKE = 1,
J1LE(1) = 62,
J1LE(2) = 57,
J1TE(1) = 92,
J1TE(2) = 27,
J2OPT = 3,
JBCD1 = 1,
JBCD2 = 1,
JDMP1 = 3,
JDMP2 = 1,
JDMP3 = 2,
J1MINM1 = 1,
J1MAXP1 = 118,
J2MINM1 = 1,
J2MAXP1 = 1,
J3MINM1 = 1,
J3MAXP1 = 49,
LVAR(1) = 1,0,1,0,0,0,0,1,0,0,
NT = 80,
NTSTS = 1,
REINF = .48E+07,
SLOPEW = 0.4696,
SSEPS = .00001,
TINF = 540.,
TRNSFMT(3) = 2,
TRNSFMT(1) = 3,
UZERO = 1.0,
VELMIN = .0003,
WWEDGE = .995,
XCENTR(3) = .01,
XCENTR(1) = .1,
XGMAX(1) = 4.817, 1.00, 0.20,
XGMIN(1) = .10000, 0.00, 0.00,
YDDLT = 0

```
END
GRID1
SURF = 2,
INCAF = .01,
INCFI = .005,
INCWK = .1,
OFFSET = .1,
ENDAF = 1.0,
ENDWK = 5.5,
ADMIN = 1.4,
MAX = 2.0,
PRINT = .FALSE.,
PLOT = .FALSE.,
FILET = .TRUE.,
I = .12,
AIRFOIL = 1,
AF = 1,
NGSPAN = 1.1963,
IORD1 = .8059,
LEN = 1.0,
IEPLE = 0.0,
IEPTE = 0.0,
END
HROOT
LUST(1,1) = 1,
PX(1,1,1) = 1.0, 35.0, 61.0,
PY(1,1,1) = 0.065, 1.1, 5.42688,
SLOPE(1,1) = 3,
SLOPE(1,1,1) = 1.0, 35.0, 61.0,
OPE(1,1,1) = .0175, .015, .3,
AP(1,1,1) = 15.0, 30.0, 50.0, 55.0,
PHA(1,1,1) = 10.0, 10.0, 10.0, 10.0,
LUST(1,2) = 1,
PX(1,1,2) = 1.0, 35.0, 61.0,
PY(1,1,2) = 0.065, 1.1, 5.42688,
SLOPE(1,2) = 3,
SLOPE(1,1,2) = 1.0, 35.0, 61.0,
OPE(1,1,2) = .0175, .015, .3,
AP(1,1,2) = 15.0, 30.0, 50.0, 55.0,
PHA(1,1,2) = 10.0, 10.0, 10.0, 10.0,
RT = 16,
END
```

Namelist Input - Unsteady Case

```

&INPUT1
  ICYB205 = 1,
  IRESTRT = 3,
  JPLANES = 1,
  LRESTRT = 200,
  NFOUT   = 0,
  NFINP   = 0,
&END
&INPUT2
  AMEGA = -4.789272,
  AMPL  = .100,
  AMINF   = 0.599,
  BETA    = 1.0,
  CHARACL = 1.0,
  CLW1    = 2.439,
  CLW2    = 5.0,
  DT      = -.25,
  DTMAX   = 0.1,
  DTMIN   = 0.01,
  IBLAYER(1) = 1,
  IC      = 5,
  IDIM    = 118, 1, 49,
  IDTADJ  = 0,
  IDT1    = 80,
  IENDCP1 = 0,
  IEQBC(1,1,1,1) = 18,
  IEQBC(1,1,2,1) = 18,
  IEQBC(1,3,1,2) = 10,
  IEQBC(1,3,2,2) = 10,
  IEQBC(1,3,3,1) = 10,
  IEQBC(1,3,3,2) = 10,
  IEQBC(1,3,4,2) = 10,
  IFREQ(2)   = 1,
  IFREQ(4)   = 360,
  IMDMP    = 0,
  IMODEL   = 4,
  IMUSKER  = 1,
  INCOMPR  = 0,
  INCORE   = .T.,
  INTPRNT  = 0,
  INTRFC   = 0,
  IOUT     = 0000010000,
  IPRINTF  = 0,
  IPRINTL  = 1,
  ISTEADY  = 0,
  IUPD     = 3
&END
&INPUT3
  ICGRID   = 3,
  IWAKE    = 1,
  J1LE(1)  = 62,
  J1LE(2)  = 57,
  J1TE(1)  = 92,
  J1TE(2)  = 27,
  JDMP1    = 113,
  JDMP2    = 1,
  JDMP3    = 49,
  J1MAXP1  = 118,
  J3MAXP1  = 49,

```

```

LVAR(1)      = 1,0,1,0,0,0,0,1,0,0,
NT          = 200,
XGMAX(1)    = 4.60,  1.00,  0.200,
XGMIN(1)    = 0.100, 0.00,  0.00,
YDDLT       = 0,
JCF = 2,   JDSTR = 33,  JTHET = 64,  JUP = 95,
J1SK = 22,  JFREQ(4) = 1,
X1MINM1 = 0.00, X1MAXP1 = .0000, X2MINM1 = -.00, X2MAXP1 = .0000,
JDIM(1) = 40,1,61,
KDIM(1) = 40,1,61,
NCOEFF = 2,
NSPUC = 90

&END
&GRID1
NSURF = 2,
XINCAF = .01,
XINCFI = .005,
XINCWK = .1,
XOFFSET = .1,
XENDAF = 1.0,
XENDWK = 5.5,
RADMIN = 1.4,
XBMAX = 2.0,
IPRINT = .FALSE.,
IPLOT = .FALSE.,
IFILLET = .TRUE.,
TH = .12,
IAIRFOIL = 1,
VAF = 1,
WINGSPAN = 1.1963,
CHORD1 = .8059,
AFLEN = 1.0,
SWEEPLE = 0.0,
SWEETE = 0.0,
&END
&OHROOT
NCLUST(1,1) = 1,
CLPX(1,1,1) = 1.0, 35.0, 61.0,
CLPY(1,1,1) = 0.065, 1.1, 5.42688,
VSLOPE(1,1) = 3,
KSLOPE(1,1,1) = 1.0, 35.0, 61.0,
SLOPE(1,1,1) = .0175, .015, .3,
ETAP(1,1,1) = 15.0, 30.0, 50.0, 55.0,
ALPHA(1,1,1) = 10.0, 10.0, 10.0, 10.0,
NCLUST(1,2) = 1,
CLPX(1,1,2) = 1.0, 35.0, 61.0,
CLPY(1,1,2) = 0.065, 1.1, 5.42688,
VSLOPE(1,2) = 3,
KSLOPE(1,1,2) = 1.0, 35.0, 61.0,
SLOPE(1,1,2) = .0175, .015, .3,
ETAP(1,1,2) = 15.0, 30.0, 50.0, 55.0,
ALPHA(1,1,2) = 10.0, 10.0, 10.0, 10.0,
IPRT = 16,
&END

```

Sample Output

F R E E S T R E A M P R O P E R T I E S

THE FREE STREAM GAS IS AIR

THE EQUATION OF STATE IS THAT OF A PERFECT GAS

GAMMA	=	0.140000E+01	RINF	=	0.177600E+04	CPINF	=	0.621600E+04			
AMINF	=	0.599000E+00	REINF	=	0.480000E+07	UINF	=	0.694079E+03			
PEINF	=	0.246433E+04	RHOINF	=	0.256958E-02	TINF	=	0.540000E+03	AMUINF	=	0.371561E-06
PSTAG	=	0.314080E+04	TSTAG	=	0.578751E+03	TREF	=	0.256255E+01			
TSTAGN	=	0.746765E+01									

COORDINATE TRANSFORMATION INFORMATION
OH GRID TRNSFMT = 3

COORDINATE TRANSFORMATION INFORMATION
HYPERBOLIC FUNCTIONS TRNSFMT = 2

NON DIMENSIONAL COORDINATES 0 - 1

DIRECTION 3

TANHR1 = -0.999920E+00 TANHR2 = 0.000000E+00 SINHR1 = 0.100000E-01 SINHR2 = 0.000000E+00

IX	XG	DXG1	DXG2	TAU	SIGMA
1	0.0000000000E+00	0.1620319392E-04	0.3281399854E-05	0.1620319392E-04	0.2025156195E+00
2	0.1796048123E-04	0.1984043923E-04	0.4017926678E-05	0.1984043923E-04	0.2025119822E+00
3	0.3995263409E-04	0.2429406473E-04	0.4919731005E-05	0.2429406473E-04	0.2025075285E+00
4	0.6688134574E-04	0.2974725814E-04	0.6023881500E-05	0.2974725814E-04	0.2025020750E+00
5	0.9985454002E-04	0.3642428831E-04	0.7375750737E-05	0.3642428831E-04	0.2024953974E+00
6	0.1402287043E-03	0.4459970570E-04	0.9030870466E-05	0.4459970570E-04	0.2024872210E+00
7	0.1896646102E-03	0.5460959744E-04	0.1105719890E-04	0.5460959744E-04	0.2024772095E+00
8	0.2501955015E-03	0.6686535239E-04	0.1353789030E-04	0.6686535239E-04	0.2024649510E+00
9	0.3243105302E-03	0.8187049183E-04	0.1657467629E-04	0.8187049183E-04	0.2024499416E+00
10	0.4150568310E-03	0.1002412413E-03	0.2029199125E-04	0.1002412413E-03	0.2024315640E+00
11	0.5261643738E-03	0.1227316649E-03	0.2484200130E-04	0.1227316649E-03	0.2024090630E+00
12	0.6621986398E-03	0.1502643594E-03	0.3041072855E-04	0.1502643594E-03	0.2023815139E+00
13	0.8287472625E-03	0.1839679131E-03	0.3722549977E-04	0.1839679131E-03	0.2023477853E+00
14	0.1032648107E-02	0.2252225876E-03	0.4556399166E-04	0.2252225876E-03	0.2023064921E+00
15	0.1282267860E-02	0.2757159749E-03	0.5576519374E-04	0.2757159749E-03	0.2022559402E+00
16	0.1587842121E-02	0.3375107292E-03	0.6824266351E-04	0.3375107292E-03	0.2021940567E+00
17	0.1961890287E-02	0.4131268781E-03	0.8350050480E-04	0.4131268781E-03	0.2021183061E+00
18	0.2419721258E-02	0.5056416739E-03	0.1021525566E-03	0.5056416739E-03	0.2020255882E+00
19	0.2980049182E-02	0.6188104606E-03	0.1249453276E-03	0.6188104606E-03	0.2019121130E+00
20	0.3665742231E-02	0.7572125842E-03	0.1527852436E-03	0.7572125842E-03	0.2017732495E+00
21	0.4504731705E-02	0.9264269408E-03	0.1867707664E-03	0.9264269408E-03	0.2016033410E+00
22	0.5531113610E-02	0.1133242291E-02	0.2282298781E-03	0.1133242291E-02	0.2013954826E+00
23	0.6786480246E-02	0.1385907884E-02	0.2787632459E-03	0.1385907884E-02	0.2011412513E+00
24	0.8321524933E-02	0.1694430093E-02	0.3402930407E-03	0.1694430093E-02	0.2008303807E+00
25	0.1019796869E-01	0.2070920474E-02	0.4151167784E-03	0.2070920474E-02	0.2004503716E+00
26	0.1249086251E-01	0.2529999544E-02	0.5059645514E-03	0.2529999544E-02	0.1999860248E+00
27	0.1529132230E-01	0.3089258243E-02	0.6160564432E-03	0.3089258243E-02	0.1994188879E+00
28	0.1870975329E-01	0.3769774683E-02	0.7491545139E-03	0.3769774683E-02	0.1987266022E+00
29	0.2287961528E-01	0.4596676542E-02	0.9096001914E-03	0.4596676542E-02	0.1978821401E+00
30	0.2796176489E-01	0.5599727872E-02	0.1102322813E-02	0.5599727872E-02	0.1968529254E+00
31	0.3414938153E-01	0.6813901492E-02	0.1332798017E-02	0.6813901492E-02	0.1955998364E+00
32	0.4167343304E-01	0.8279872394E-02	0.1606925330E-02	0.8279872394E-02	0.1940760984E+00
33	0.5080855493E-01	0.1004433120E-01	0.1930782549E-02	0.1004433120E-01	0.1922260935E+00
34	0.6187909313E-01	0.1215996768E-01	0.2310200961E-02	0.1215996768E-01	0.1899841366E+00
35	0.7526487947E-01	0.1468491144E-01	0.2750091910E-02	0.1468491144E-01	0.1872733058E+00
36	0.9140605993E-01	0.1768134218E-01	0.3253455903E-02	0.1768134218E-01	0.1840044647E+00

37	0.1108059683E+00	0.2121290291E-01	0.3819927921E-02	0.2121290291E-01	0.1800756802E+00
38	0.1340306364E+00	0.2534048385E-01	0.4444019497E-02	0.2534048385E-01	0.1753723221E+00
39	0.1617030839E+00	0.3011592560E-01	0.5112727063E-02	0.3011592560E-01	0.1697682193E+00
40	0.1944901088E+00	0.3557326941E-01	0.5803008197E-02	0.3557326941E-01	0.1631283346E+00
41	0.2330790349E+00	0.4171743313E-01	0.6479279481E-02	0.4171743313E-01	0.1553134744E+00
42	0.2781419774E+00	0.4851069422E-01	0.7091658307E-02	0.4851069422E-01	0.1461875246E+00
43	0.3302859508E+00	0.5585817324E-01	0.7575907495E-02	0.5585817324E-01	0.1356275556E+00
44	0.3899888633E+00	0.6359460616E-01	0.7856273078E-02	0.6359460616E-01	0.1235367833E+00
45	0.4575243304E+00	0.7147587968E-01	0.7852325581E-02	0.7147587968E-01	0.1098597963E+00
46	0.5328821929E+00	0.7917965549E-01	0.7490288683E-02	0.7917965549E-01	0.9459865210E-01
47	0.6156959997E+00	0.8631929111E-01	0.6718020042E-02	0.8631929111E-01	0.7782756270E-01
48	0.7051922144E+00	0.9247353161E-01	0.5520964027E-02	0.9247353161E-01	0.5970318134E-01
49	0.8001767246E+00	0.9723085530E-01	0.3934673537E-02	0.9723085530E-01	0.4046733441E-01
50	0.8990707540E+00	0.1002425287E+00	0.2048932105E-02	0.1002425287E+00	0.2043974879E-01
51	0.1000000000E+01	0.1012740130E+00	0.3790299801E-14	0.1012740130E+00	0.3742618358E-13

P H Y S I C A L C O O R D I N A T E S X G M N - X G M X

DIRECTION 3

TANHR1 = -0.999920E+00	TANHR2 = 0.000000E+00	SINHR1 = 0.100000E-01	SINHR2 = 0.000000E+00
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X	XG	DXG1	DXG2	TAU	SIGMA
1	0.0000000000E+00	0.3240638783E-05	0.6562799708E-06	0.3240638783E-05	0.2025156195E+00
2	0.3592096246E-05	0.3968087847E-05	0.8035853355E-06	0.3968087847E-05	0.2025119822E+00
3	0.7990526819E-05	0.4858812946E-05	0.9839462011E-06	0.4858812946E-05	0.2025075285E+00
4	0.1337626915E-04	0.5949451629E-05	0.1204776300E-05	0.5949451629E-05	0.2025020750E+00
5	0.1997090800E-04	0.7284857662E-05	0.1475150147E-05	0.7284857662E-05	0.2024953974E+00
6	0.2804574087E-04	0.8919941141E-05	0.1806174093E-05	0.8919941141E-05	0.2024872210E+00
7	0.3793292204E-04	0.1092191949E-04	0.2211439780E-05	0.1092191949E-04	0.2024772095E+00
8	0.5003910031E-04	0.1337307048E-04	0.2707578059E-05	0.1337307048E-04	0.2024649510E+00
9	0.6486210604E-04	0.1637409837E-04	0.3314935257E-05	0.1637409837E-04	0.2024499416E+00
10	0.8301136619E-04	0.2004824825E-04	0.4058398250E-05	0.2004824825E-04	0.2024315640E+00
11	0.1052328748E-03	0.2454633299E-04	0.4968400260E-05	0.2454633299E-04	0.2024090630E+00
12	0.1324397280E-03	0.3005287189E-04	0.6082145711E-05	0.3005287189E-04	0.2023815139E+00
13	0.1657494525E-03	0.3679358262E-04	0.7445099955E-05	0.3679358262E-04	0.2023477853E+00
14	0.2065296215E-03	0.4504451753E-04	0.9112798331E-05	0.4504451753E-04	0.2023064921E+00
15	0.2564535721E-03	0.5514319498E-04	0.1115303875E-04	0.5514319498E-04	0.2022559402E+00
16	0.3175684241E-03	0.6750214584E-04	0.1364853270E-04	0.6750214584E-04	0.2021940567E+00
17	0.3923780573E-03	0.8262537561E-04	0.1670010096E-04	0.8262537561E-04	0.2021183061E+00
18	0.4839442516E-03	0.1011283348E-03	0.2043051131E-04	0.1011283348E-03	0.2020255882E+00
19	0.5960098363E-03	0.1237620921E-03	0.2498906553E-04	0.1237620921E-03	0.2019121130E+00
20	0.7331484462E-03	0.1514425168E-03	0.3055704873E-04	0.1514425168E-03	0.2017732495E+00
21	0.9009463409E-03	0.1852853882E-03	0.3735415329E-04	0.1852853882E-03	0.2016033410E+00
22	0.1106222722E-02	0.2266484582E-03	0.4564597563E-04	0.2266484582E-03	0.20113954826E+00
23	0.1357296049E-02	0.2771815767E-03	0.5575264917E-04	0.2771815767E-03	0.2011412513E+00
24	0.1664304987E-02	0.3388860186E-03	0.6805860814E-04	0.3388860186E-03	0.2008303807E+00
25	0.2039593738E-02	0.4141840947E-03	0.8302335569E-04	0.4141840947E-03	0.2004503716E+00
26	0.2498172503E-02	0.5059999088E-03	0.1011929103E-03	0.5059999088E-03	0.1999860248E+00
27	0.3058264460E-02	0.6178516485E-03	0.1232112886E-03	0.6178516485E-03	0.1994188879E+00
28	0.3741950657E-02	0.7539549365E-03	0.1498309028E-03	0.7539549365E-03	0.1987266022E+00
29	0.4575923056E-02	0.9193353085E-03	0.1819200383E-03	0.9193353085E-03	0.1978821401E+00
30	0.5592352978E-02	0.1119945574E-02	0.2204645626E-03	0.1119945574E-02	0.1968529254E+00
31	0.6829876307E-02	0.1362780298E-02	0.2665596034E-03	0.1362780298E-02	0.1955998364E+00
32	0.8334686607E-02	0.1655974479E-02	0.3213850659E-03	0.1655974479E-02	0.1940760984E+00
33	0.1016171099E-01	0.2008866240E-02	0.3861565097E-03	0.2008866240E-02	0.1922260935E+00
34	0.1237581863E-01	0.2431993535E-02	0.4620401921E-03	0.2431993535E-02	0.1899841366E+00

35	0.1505297589E-01	0.2936982287E-02	0.5500183821E-03	0.2936982287E-02	0.1872733058E+00
36	0.1828121199E-01	0.3536268437E-02	0.6506891806E-03	0.3536268437E-02	0.1840044647E+00
37	0.2216119366E-01	0.4242580582E-02	0.7639855842E-03	0.4242580582E-02	0.1800756802E+00
38	0.2680612728E-01	0.5068096770E-02	0.8888038995E-03	0.5068096770E-02	0.1753723221E+00
39	0.3234061678E-01	0.6023185121E-02	0.1022545413E-02	0.6023185121E-02	0.1697682193E+00
40	0.3889802177E-01	0.7114653883E-02	0.1160601639E-02	0.7114653883E-02	0.1631283346E+00
41	0.4661580698E-01	0.8343486626E-02	0.1295855896E-02	0.8343486626E-02	0.1553134744E+00
42	0.5562839548E-01	0.9702138843E-02	0.1418331661E-02	0.9702138843E-02	0.1461875246E+00
43	0.6605719016E-01	0.1117163465E-01	0.1515181499E-02	0.1117163465E-01	0.1356275556E+00
44	0.7799777266E-01	0.1271892123E-01	0.1571254616E-02	0.1271892123E-01	0.1235367833E+00
45	0.9150486609E-01	0.1429517594E-01	0.1570465116E-02	0.1429517594E-01	0.1098597963E+00
46	0.1065764386E+00	0.1583593110E-01	0.1498057737E-02	0.1583593110E-01	0.9459865210E-01
47	0.1231391999E+00	0.1726385822E-01	0.1343604008E-02	0.1726385822E-01	0.7782756270E-01
48	0.1410384429E+00	0.1849470632E-01	0.1104192805E-02	0.1849470632E-01	0.5970318134E-01
49	0.1600353449E+00	0.1944617106E-01	0.7869347073E-03	0.1944617106E-01	0.4046733441E-01
50	0.1798141508E+00	0.2004850575E-01	0.4097864210E-03	0.2004850575E-01	0.2043974879E-01
51	0.2000000000E+00	0.2025480259E-01	0.7580686843E-15	0.2025480259E-01	0.3742661430E-13

1TE RESET TO 103 ON SURFACE NUMBER 1 YG1 AT THIS POINT = 0.121541E+01

COORDINATE TRANSFORMATION INFORMATION
OH GRID TRNSFMT = 3

COORDINATE TRANSFORMATION INFORMATION
HYPERBOLIC FUNCTIONS TRNSFMT = 2

NON DIMENSIONAL COORDINATES 0 - 1

DIRECTION 3

TANHR1 = -0.999920E+00 TANHR2 = 0.000000E+00 SINHR1 = 0.100000E-01 SINHR2 = 0.000000E+00

JX	XG	DXG1	DXG2	TAU	SIGMA
1	0.0000000000E+00	0.1620319392E-04	0.3281399854E-05	0.1620319392E-04	0.2025156195E+00
2	0.1796048123E-04	0.1984043923E-04	0.4017926678E-05	0.1984043923E-04	0.2025119822E+00
3	0.3995263409E-04	0.2429406473E-04	0.4919731005E-05	0.2429406473E-04	0.2025075285E+00
4	0.6688134574E-04	0.2974725814E-04	0.6023881500E-05	0.2974725814E-04	0.2025020750E+00
5	0.9985454002E-04	0.3642428831E-04	0.7375750737E-05	0.3642428831E-04	0.2024953974E+00
6	0.1402287043E-03	0.4459970570E-04	0.9030870466E-05	0.4459970570E-04	0.2024872210E+00
7	0.1896646102E-03	0.5460959744E-04	0.1105719890E-04	0.5460959744E-04	0.2024772095E+00
8	0.2501955015E-03	0.6686535239E-04	0.1353789030E-04	0.6686535239E-04	0.2024649510E+00
9	0.3243105302E-03	0.8187049183E-04	0.1657467629E-04	0.8187049183E-04	0.2024499416E+00
10	0.4150568310E-03	0.1002412413E-03	0.2029199125E-04	0.1002412413E-03	0.2024315640E+00

11	0.5261643738E-03	0.1227316649E-03	0.2484200130E-04	0.1227316649E-03	0.2024090630E+00
12	0.6621986398E-03	0.1502643594E-03	0.3041072855E-04	0.1502643594E-03	0.2023815139E+00
13	0.8287472625E-03	0.1839679131E-03	0.3722549977E-04	0.1839679131E-03	0.2023477853E+00
14	0.1032648107E-02	0.2252225876E-03	0.4556399166E-04	0.2252225876E-03	0.2023064921E+00
15	0.1282267860E-02	0.2757159749E-03	0.5576519374E-04	0.2757159749E-03	0.2022559402E+00
16	0.1587842121E-02	0.3375107292E-03	0.6824266351E-04	0.3375107292E-03	0.2021940567E+00
17	0.1961890287E-02	0.4131268781E-03	0.8350050480E-04	0.4131268781E-03	0.2021183061E+00
18	0.2419721258E-02	0.5056416739E-03	0.1021525566E-03	0.5056416739E-03	0.2020255882E+00
19	0.2980049182E-02	0.6188104606E-03	0.1249453276E-03	0.6188104606E-03	0.2019121130E+00
20	0.3665742231E-02	0.7572125842E-03	0.1527852436E-03	0.7572125842E-03	0.2017732495E+00
21	0.4504731705E-02	0.9264269408E-03	0.1867707664E-03	0.9264269408E-03	0.2016033410E+00
22	0.5531113610E-02	0.1133242291E-02	0.2282298781E-03	0.1133242291E-02	0.2013954826E+00
23	0.6786480246E-02	0.1385907884E-02	0.2787632459E-03	0.1385907884E-02	0.2011412513E+00
24	0.8321524933E-02	0.1694430093E-02	0.3402930407E-03	0.1694430093E-02	0.2008303807E+00
25	0.1019796869E-01	0.2070920474E-02	0.4151167784E-03	0.2070920474E-02	0.2004503716E+00
26	0.1249086251E-01	0.2529999544E-02	0.5059645514E-03	0.2529999544E-02	0.1999860248E+00
27	0.1529132230E-01	0.3089258243E-02	0.6160564432E-03	0.3089258243E-02	0.1994188879E+00
28	0.1870975329E-01	0.3769774683E-02	0.7491545139E-03	0.3769774683E-02	0.1987266022E+00
29	0.2287961528E-01	0.4596676542E-02	0.9096001914E-03	0.4596676542E-02	0.1978821401E+00
30	0.2796176489E-01	0.5599727872E-02	0.1102322813E-02	0.5599727872E-02	0.1968529254E+00
31	0.3414938153E-01	0.6813901492E-02	0.1332798017E-02	0.6813901492E-02	0.1955998364E+00
32	0.4167343304E-01	0.8279872394E-02	0.1606925330E-02	0.8279872394E-02	0.1940760984E+00
33	0.5080855493E-01	0.1004433120E-01	0.1930782549E-02	0.1004433120E-01	0.1922260935E+00
34	0.6187909313E-01	0.1215996768E-01	0.2310200961E-02	0.1215996768E-01	0.1899841366E+00
35	0.7526487947E-01	0.1468491144E-01	0.2750091910E-02	0.1468491144E-01	0.1872733058E+00
36	0.9140605993E-01	0.1768134218E-01	0.3253445903E-02	0.1768134218E-01	0.1840044647E+00
37	0.1108059683E+00	0.2121290291E-01	0.3819927921E-02	0.2121290291E-01	0.1800756802E+00
38	0.1340306364E+00	0.2534048385E-01	0.4444019497E-02	0.2534048385E-01	0.1753723221E+00
39	0.1617030839E+00	0.3011592560E-01	0.5112727063E-02	0.3011592560E-01	0.1697682193E+00
40	0.1944901088E+00	0.3557326941E-01	0.5803008197E-02	0.3557326941E-01	0.1631283346E+00
41	0.2330790349E+00	0.4171743313E-01	0.6479279481E-02	0.4171743313E-01	0.1553134744E+00
42	0.2781419774E+00	0.4851069422E-01	0.7091658307E-02	0.4851069422E-01	0.1461875246E+00
43	0.3302859508E+00	0.5585817324E-01	0.7575907495E-02	0.5585817324E-01	0.1356275556E+00
44	0.3899888633E+00	0.6359460616E-01	0.7856273078E-02	0.6359460616E-01	0.1235367833E+00
45	0.4575243304E+00	0.7147587968E-01	0.7852325581E-02	0.7147587968E-01	0.1098597963E+00
46	0.5328821929E+00	0.7917965549E-01	0.7490288683E-02	0.7917965549E-01	0.9459865210E-01
47	0.6156959997E+00	0.8631929111E-01	0.6718020042E-02	0.8631929111E-01	0.7782756270E-01
48	0.7051922144E+00	0.9247353161E-01	0.5520964027E-02	0.9247353161E-01	0.5970318134E-01
49	0.8001767246E+00	0.9723085530E-01	0.3934673537E-02	0.9723085530E-01	0.4046733441E-01
50	0.8990707540E+00	0.1002425287E+00	0.2048932105E-02	0.1002425287E+00	0.2043974879E-01
51	0.1000000000E+01	0.1012740130E+00	0.3790299801E-14	0.1012740130E+00	0.3742618358E-13

P H Y S I C A L C O O R D I N A T E S X G M N - X G M X

DIRECTION 3

TANHR1 = -0.999920E+00 TANHR2 = 0.000000E+00 SINHR1 = 0.100000E-01 SINHR2 = 0.000000E+00

X	XG	DXG1	DXG2	TAU	SIGMA
1	0.0000000000E+00	0.3240638783E-05	0.6562799708E-06	0.3240638783E-05	0.2025156195E+00
2	0.3592096246E-05	0.3968087847E-05	0.8035853355E-06	0.3968087847E-05	0.2025119822E+00
3	0.7990526819E-05	0.4858812946E-05	0.9839462011E-06	0.4858812946E-05	0.2025075285E+00
4	0.1337626915E-04	0.5949451629E-05	0.1204776300E-05	0.5949451629E-05	0.2025020750E+00
5	0.1997090800E-04	0.7284857662E-05	0.1475150147E-05	0.7284857662E-05	0.2024953974E+00
6	0.2804574087E-04	0.8919941141E-05	0.1806174093E-05	0.8919941141E-05	0.2024872210E+00
7	0.3793292204E-04	0.1092191949E-04	0.2211439780E-05	0.1092191949E-04	0.2024772095E+00
8	0.5003910031E-04	0.1337307048E-04	0.2707578059E-05	0.1337307048E-04	0.2024649510E+00

9	0.6486210604E-04	0.1637409837E-04	0.3314935257E-05	0.1637409837E-04	0.2024499416E+00
10	0.8301136619E-04	0.2004824825E-04	0.4058398250E-05	0.2004824825E-04	0.2024315640E+00
11	0.1052328748E-03	0.2454633299E-04	0.4968400260E-05	0.2454633299E-04	0.2024090630E+00
12	0.1324397280E-03	0.3005287189E-04	0.6082145711E-05	0.3005287189E-04	0.2023815139E+00
13	0.1657494525E-03	0.3679358262E-04	0.7445099955E-05	0.3679358262E-04	0.2023477853E+00
14	0.2065296215E-03	0.4504451753E-04	0.9112798331E-05	0.4504451753E-04	0.2023064921E+00
15	0.2564535721E-03	0.5514319498E-04	0.1115303875E-04	0.5514319498E-04	0.2022559402E+00
16	0.3175684241E-03	0.6750214584E-04	0.1364853270E-04	0.6750214584E-04	0.2021940567E+00
17	0.3923780573E-03	0.8262537561E-04	0.1670010096E-04	0.8262537561E-04	0.2021183061E+00
18	0.4839442516E-03	0.1011283348E-03	0.2043051131E-04	0.1011283348E-03	0.2020255882E+00
19	0.5960098363E-03	0.1237620921E-03	0.2498906553E-04	0.1237620921E-03	0.2019121130E+00
20	0.7331484462E-03	0.1514425168E-03	0.3055704873E-04	0.1514425168E-03	0.2017732495E+00
21	0.9009463409E-03	0.1852853882E-03	0.3735415329E-04	0.1852853882E-03	0.2016033410E+00
22	0.1106222722E-02	0.2266484582E-03	0.4564597563E-04	0.2266484582E-03	0.2013954826E+00
23	0.1357296049E-02	0.2771815767E-03	0.5575264917E-04	0.2771815767E-03	0.2011412513E+00
24	0.1664304987E-02	0.3388860186E-03	0.6805860814E-04	0.3388860186E-03	0.2008303807E+00
25	0.2039593738E-02	0.4141840947E-03	0.8302335569E-04	0.4141840947E-03	0.2004503716E+00
26	0.2498172503E-02	0.5059999088E-03	0.1011929103E-03	0.5059999088E-03	0.1999860248E+00
27	0.3058264460E-02	0.6178516485E-03	0.1232112886E-03	0.6178516485E-03	0.1994188879E+00
28	0.3741950657E-02	0.7539549365E-03	0.1498309028E-03	0.7539549365E-03	0.1987266022E+00
29	0.4575923056E-02	0.9193353085E-03	0.1819200383E-03	0.9193353085E-03	0.1978821401E+00
30	0.5592352978E-02	0.1119945574E-02	0.2204645626E-03	0.1119945574E-02	0.1968529254E+00
31	0.6829876307E-02	0.1362780298E-02	0.2665596034E-03	0.1362780298E-02	0.1955998364E+00
32	0.8334686607E-02	0.1655974479E-02	0.3213850659E-03	0.1655974479E-02	0.1940760984E+00
33	0.1016171099E-01	0.2008866240E-02	0.3861565097E-03	0.2008866240E-02	0.1922260935E+00
34	0.1237581863E-01	0.2431993535E-02	0.4620401921E-03	0.2431993535E-02	0.1899841366E+00
35	0.1505297589E-01	0.2936982287E-02	0.5500183821E-03	0.2936982287E-02	0.1872733058E+00
36	0.1828121199E-01	0.3536268437E-02	0.6506891806E-03	0.3536268437E-02	0.1840044647E+00
37	0.2216119366E-01	0.4242580582E-02	0.7639855842E-03	0.4242580582E-02	0.1800756802E+00
38	0.2680612728E-01	0.5068096770E-02	0.8888038995E-03	0.5068096770E-02	0.1753723221E+00
39	0.3234061678E-01	0.6023185121E-02	0.1022545413E-02	0.6023185121E-02	0.1697682193E+00
40	0.3889802177E-01	0.7114653883E-02	0.1160601639E-02	0.7114653883E-02	0.1631283346E+00
41	0.4661580698E-01	0.8343486626E-02	0.1295855896E-02	0.8343486626E-02	0.1553134744E+00
42	0.5562839548E-01	0.9702138843E-02	0.1418331661E-02	0.9702138843E-02	0.1461875246E+00
43	0.6605719016E-01	0.1117163465E-01	0.1515181499E-02	0.1117163465E-01	0.1356275556E+00
44	0.7799777266E-01	0.1271892123E-01	0.1571254616E-02	0.1271892123E-01	0.1235367833E+00
45	0.9150486609E-01	0.1429517594E-01	0.1570465116E-02	0.1429517594E-01	0.1098597963E+00
46	0.1065764386E+00	0.1583593110E-01	0.1498057737E-02	0.1583593110E-01	0.9459865210E-01
47	0.1231391999E+00	0.1726385822E-01	0.1343604008E-02	0.1726385822E-01	0.7782756270E-01
48	0.1410384429E+00	0.1849470632E-01	0.1104192805E-02	0.1849470632E-01	0.5970318134E-01
49	0.1600353449E+00	0.1944617106E-01	0.7869347073E-03	0.1944617106E-01	0.4046733441E-01
50	0.1798141508E+00	0.2004850575E-01	0.4097864210E-03	0.2004850575E-01	0.2043974879E-01
51	0.2000000000E+00	0.2025480259E-01	0.7580686843E-15	0.2025480259E-01	0.3742661430E-13

TE RESET TO 16 ON SURFACE NUMBER 2 YG1 AT THIS POINT = 0.121541E+01

, IS, N1, XP, UP, WP, CP	1	1	1	0.667000E-02	0.794920E+00	0.000000E+00	0.368102E+00
, IS, N1, XP, UP, WP, CP	1	1	2	0.200000E-01	0.107680E+01	0.000000E+00-0.159498E+00	
, IS, N1, XP, UP, WP, CP	1	1	3	0.400000E-01	0.119000E+01	0.000000E+00-0.416100E+00	
, IS, N1, XP, UP, WP, CP	1	1	4	0.600000E-01	0.121930E+01	0.000000E+00-0.486692E+00	
, IS, N1, XP, UP, WP, CP	1	1	5	0.800000E-01	0.122960E+01	0.000000E+00-0.511916E+00	
, IS, N1, XP, UP, WP, CP	1	1	6	0.100000E+00	0.123580E+01	0.000000E+00-0.527202E+00	
, IS, N1, XP, UP, WP, CP	1	1	7	0.120000E+00	0.123870E+01	0.000000E+00-0.534378E+00	
, IS, N1, XP, UP, WP, CP	1	1	8	0.140000E+00	0.123880E+01	0.000000E+00-0.534625E+00	
, IS, N1, XP, UP, WP, CP	1	1	9	0.160000E+00	0.123690E+01	0.000000E+00-0.529922E+00	
, IS, N1, XP, UP, WP, CP	1	1	10	0.180000E+00	0.123350E+01	0.000000E+00-0.521522E+00	
, IS, N1, XP, UP, WP, CP	1	1	11	0.200000E+00	0.122920E+01	0.000000E+00-0.510933E+00	
, IS, N1, XP, UP, WP, CP	1	1	12	0.220000E+00	0.122420E+01	0.000000E+00-0.498666E+00	
, IS, N1, XP, UP, WP, CP	1	1	13	0.240000E+00	0.121870E+01	0.000000E+00-0.485230E+00	

2, IS, N1, XP, UP, WP, CP	1	1	14	0.260000E+00	0.121280E+01	0.000000E+00	-0.470884E+00
2, IS, N1, XP, UP, WP, CP	1	1	15	0.280000E+00	0.120670E+01	0.000000E+00	-0.456125E+00
2, IS, N1, XP, UP, WP, CP	1	1	16	0.300000E+00	0.120030E+01	0.000000E+00	-0.440720E+00
2, IS, N1, XP, UP, WP, CP	1	1	17	0.320000E+00	0.119380E+01	0.000000E+00	-0.425158E+00
2, IS, N1, XP, UP, WP, CP	1	1	18	0.340000E+00	0.118720E+01	0.000000E+00	-0.409444E+00
2, IS, N1, XP, UP, WP, CP	1	1	19	0.360000E+00	0.118050E+01	0.000000E+00	-0.393580E+00
2, IS, N1, XP, UP, WP, CP	1	1	20	0.380000E+00	0.117380E+01	0.000000E+00	-0.377806E+00
2, IS, N1, XP, UP, WP, CP	1	1	21	0.400000E+00	0.116710E+01	0.000000E+00	-0.362122E+00
2, IS, N1, XP, UP, WP, CP	1	1	22	0.420000E+00	0.116040E+01	0.000000E+00	-0.346528E+00
2, IS, N1, XP, UP, WP, CP	1	1	23	0.440000E+00	0.115370E+01	0.000000E+00	-0.331024E+00
2, IS, N1, XP, UP, WP, CP	1	1	24	0.460000E+00	0.114710E+01	0.000000E+00	-0.315838E+00
2, IS, N1, XP, UP, WP, CP	1	1	25	0.480000E+00	0.114050E+01	0.000000E+00	-0.300740E+00
2, IS, N1, XP, UP, WP, CP	1	1	26	0.500000E+00	0.113390E+01	0.000000E+00	-0.285729E+00
2, IS, N1, XP, UP, WP, CP	1	1	27	0.520000E+00	0.112730E+01	0.000000E+00	-0.270805E+00
2, IS, N1, XP, UP, WP, CP	1	1	28	0.540000E+00	0.112080E+01	0.000000E+00	-0.256193E+00
2, IS, N1, XP, UP, WP, CP	1	1	29	0.560000E+00	0.111430E+01	0.000000E+00	-0.241664E+00
2, IS, N1, XP, UP, WP, CP	1	1	30	0.580000E+00	0.110790E+01	0.000000E+00	-0.227442E+00
2, IS, N1, XP, UP, WP, CP	1	1	31	0.600000E+00	0.110140E+01	0.000000E+00	-0.213082E+00
2, IS, N1, XP, UP, WP, CP	1	1	32	0.620000E+00	0.109500E+01	0.000000E+00	-0.199025E+00
2, IS, N1, XP, UP, WP, CP	1	1	33	0.640000E+00	0.108850E+01	0.000000E+00	-0.184832E+00
2, IS, N1, XP, UP, WP, CP	1	1	34	0.660000E+00	0.108200E+01	0.000000E+00	-0.170724E+00
2, IS, N1, XP, UP, WP, CP	1	1	35	0.680000E+00	0.107540E+01	0.000000E+00	-0.156485E+00
2, IS, N1, XP, UP, WP, CP	1	1	36	0.700000E+00	0.106880E+01	0.000000E+00	-0.142333E+00
2, IS, N1, XP, UP, WP, CP	1	1	37	0.720000E+00	0.106200E+01	0.000000E+00	-0.127844E+00
2, IS, N1, XP, UP, WP, CP	1	1	38	0.740000E+00	0.105500E+01	0.000000E+00	-0.113025E+00
2, IS, N1, XP, UP, WP, CP	1	1	39	0.760000E+00	0.104780E+01	0.000000E+00	-0.978848E-01
2, IS, N1, XP, UP, WP, CP	1	1	40	0.780000E+00	0.104040E+01	0.000000E+00	-0.824322E-01
2, IS, N1, XP, UP, WP, CP	1	1	41	0.800000E+00	0.103250E+01	0.000000E+00	-0.660562E-01
2, IS, N1, XP, UP, WP, CP	1	1	42	0.820000E+00	0.102430E+01	0.000000E+00	-0.491905E-01
2, IS, N1, XP, UP, WP, CP	1	1	43	0.840000E+00	0.101540E+01	0.000000E+00	-0.310372E-01
2, IS, N1, XP, UP, WP, CP	1	1	44	0.860000E+00	0.100580E+01	0.000000E+00	-0.116336E-01
2, IS, N1, XP, UP, WP, CP	1	1	45	0.880000E+00	0.995200E+00	0.000000E+00	0.957696E-02
2, IS, N1, XP, UP, WP, CP	1	1	46	0.900000E+00	0.983310E+00	0.000000E+00	0.331014E-01
2, IS, N1, XP, UP, WP, CP	1	1	47	0.920000E+00	0.969630E+00	0.000000E+00	0.598177E-01
2, IS, N1, XP, UP, WP, CP	1	1	48	0.940000E+00	0.954240E+00	0.000000E+00	0.894260E-01
2, IS, N1, XP, UP, WP, CP	1	1	49	0.960000E+00	0.941290E+00	0.000000E+00	0.113973E+00
2, IS, N1, XP, UP, WP, CP	1	1	50	0.980000E+00	0.933460E+00	0.000000E+00	0.128652E+00
2, IS, N1, XP, UP, WP, CP	1	1	51	0.100000E+01	0.930840E+00	0.000000E+00	0.133537E+00
2, IS, N1, XP, UP, WP, CP	1	1	52	0.102000E+01	0.933460E+00	0.000000E+00	0.128652E+00
2, IS, N1, XP, UP, WP, CP	1	1	53	0.112274E+01	0.936810E+00	0.000000E+00	0.122387E+00
2, IS, N1, XP, UP, WP, CP	1	1	54	0.135473E+01	0.971850E+00	0.000000E+00	0.555076E-01
2, IS, N1, XP, UP, WP, CP	1	1	55	0.235080E+01	0.987070E+00	0.000000E+00	0.256928E-01
2, IS, N1, XP, UP, WP, CP	1	1	56	0.317695E+01	0.993940E+00	0.000000E+00	0.120833E-01
2, IS, N1, XP, UP, WP, CP	1	1	57	0.425898E+01	0.997070E+00	0.000000E+00	0.585142E-02
2, IS, N1, XP, UP, WP, CP	1	1	58	0.562249E+01	0.998560E+00	0.000000E+00	0.287793E-02
2, IS, N1, XP, UP, WP, CP	1	1	59	0.729170E+01	0.999310E+00	0.000000E+00	0.137952E-02
2, IS, N1, XP, UP, WP, CP	1	1	60	0.928970E+01	0.999710E+00	0.000000E+00	0.579916E-03
2, IS, N1, XP, UP, WP, CP	1	1	61	0.116386E+02	0.999940E+00	0.000000E+00	0.119996E-03
2, IS, N1, XP, UP, WP, CP	1	1	62	0.143597E+02	0.100010E+01	0.000000E+00	-0.200010E-03
2, IS, N1, XP, UP, WP, CP	1	1	63	0.174735E+02	0.100020E+01	0.000000E+00	-0.400040E-03
2, IS, N1, XP, UP, WP, CP	1	2	1	0.667000E-02	0.794920E+00	0.000000E+00	0.368102E+00
2, IS, N1, XP, UP, WP, CP	1	2	2	0.200000E-01	0.107680E+01	0.000000E+00	-0.159498E+00
2, IS, N1, XP, UP, WP, CP	1	2	3	0.400000E-01	0.119000E+01	0.000000E+00	-0.416100E+00
2, IS, N1, XP, UP, WP, CP	1	2	4	0.600000E-01	0.121930E+01	0.000000E+00	-0.486692E+00
2, IS, N1, XP, UP, WP, CP	1	2	5	0.800000E-01	0.122960E+01	0.000000E+00	-0.511916E+00
2, IS, N1, XP, UP, WP, CP	1	2	6	0.100000E+00	0.123580E+01	0.000000E+00	-0.527202E+00
2, IS, N1, XP, UP, WP, CP	1	2	7	0.120000E+00	0.123870E+01	0.000000E+00	-0.534378E+00
2, IS, N1, XP, UP, WP, CP	1	2	8	0.140000E+00	0.123880E+01	0.000000E+00	-0.534625E+00
2, IS, N1, XP, UP, WP, CP	1	2	9	0.160000E+00	0.123690E+01	0.000000E+00	-0.529922E+00
2, IS, N1, XP, UP, WP, CP	1	2	10	0.180000E+00	0.123350E+01	0.000000E+00	-0.521522E+00

, IS, N1, XP, UP, WP, CP	1	2	11	0.200000E+00	0.122920E+01	0.000000E+00-0.510933E+00
, IS, N1, XP, UP, WP, CP	1	2	12	0.220000E+00	0.122420E+01	0.000000E+00-0.498666E+00
, IS, N1, XP, UP, WP, CP	1	2	13	0.240000E+00	0.121870E+01	0.000000E+00-0.485230E+00
, IS, N1, XP, UP, WP, CP	1	2	14	0.260000E+00	0.121280E+01	0.000000E+00-0.470884E+00
, IS, N1, XP, UP, WP, CP	1	2	15	0.280000E+00	0.120670E+01	0.000000E+00-0.456125E+00
, IS, N1, XP, UP, WP, CP	1	2	16	0.300000E+00	0.120030E+01	0.000000E+00-0.440720E+00
, IS, N1, XP, UP, WP, CP	1	2	17	0.320000E+00	0.119380E+01	0.000000E+00-0.425158E+00
, IS, N1, XP, UP, WP, CP	1	2	18	0.340000E+00	0.118720E+01	0.000000E+00-0.409444E+00
, IS, N1, XP, UP, WP, CP	1	2	19	0.360000E+00	0.118050E+01	0.000000E+00-0.393580E+00
, IS, N1, XP, UP, WP, CP	1	2	20	0.380000E+00	0.117380E+01	0.000000E+00-0.377806E+00
, IS, N1, XP, UP, WP, CP	1	2	21	0.400000E+00	0.116710E+01	0.000000E+00-0.362122E+00
, IS, N1, XP, UP, WP, CP	1	2	22	0.420000E+00	0.116040E+01	0.000000E+00-0.346528E+00
, IS, N1, XP, UP, WP, CP	1	2	23	0.440000E+00	0.115370E+01	0.000000E+00-0.331024E+00
, IS, N1, XP, UP, WP, CP	1	2	24	0.460000E+00	0.114710E+01	0.000000E+00-0.315838E+00
, IS, N1, XP, UP, WP, CP	1	2	25	0.480000E+00	0.114050E+01	0.000000E+00-0.300740E+00
, IS, N1, XP, UP, WP, CP	1	2	26	0.500000E+00	0.113390E+01	0.000000E+00-0.285729E+00
, IS, N1, XP, UP, WP, CP	1	2	27	0.520000E+00	0.112730E+01	0.000000E+00-0.270805E+00
, IS, N1, XP, UP, WP, CP	1	2	28	0.540000E+00	0.112080E+01	0.000000E+00-0.256193E+00
, IS, N1, XP, UP, WP, CP	1	2	29	0.560000E+00	0.111430E+01	0.000000E+00-0.241664E+00
, IS, N1, XP, UP, WP, CP	1	2	30	0.580000E+00	0.110790E+01	0.000000E+00-0.227442E+00
, IS, N1, XP, UP, WP, CP	1	2	31	0.600000E+00	0.110140E+01	0.000000E+00-0.213082E+00
, IS, N1, XP, UP, WP, CP	1	2	32	0.620000E+00	0.109500E+01	0.000000E+00-0.199025E+00
, IS, N1, XP, UP, WP, CP	1	2	33	0.640000E+00	0.108850E+01	0.000000E+00-0.184832E+00
, IS, N1, XP, UP, WP, CP	1	2	34	0.660000E+00	0.108200E+01	0.000000E+00-0.170724E+00
, IS, N1, XP, UP, WP, CP	1	2	35	0.680000E+00	0.107540E+01	0.000000E+00-0.156485E+00
, IS, N1, XP, UP, WP, CP	1	2	36	0.700000E+00	0.106880E+01	0.000000E+00-0.142333E+00
, IS, N1, XP, UP, WP, CP	1	2	37	0.720000E+00	0.106200E+01	0.000000E+00-0.127844E+00
, IS, N1, XP, UP, WP, CP	1	2	38	0.740000E+00	0.105500E+01	0.000000E+00-0.113025E+00
, IS, N1, XP, UP, WP, CP	1	2	39	0.760000E+00	0.104780E+01	0.000000E+00-0.978848E-01
, IS, N1, XP, UP, WP, CP	1	2	40	0.780000E+00	0.104040E+01	0.000000E+00-0.824322E-01
, IS, N1, XP, UP, WP, CP	1	2	41	0.800000E+00	0.103250E+01	0.000000E+00-0.660562E-01
, IS, N1, XP, UP, WP, CP	1	2	42	0.820000E+00	0.102430E+01	0.000000E+00-0.491905E-01
, IS, N1, XP, UP, WP, CP	1	2	43	0.840000E+00	0.101540E+01	0.000000E+00-0.310372E-01
, IS, N1, XP, UP, WP, CP	1	2	44	0.860000E+00	0.100580E+01	0.000000E+00-0.116336E-01
, IS, N1, XP, UP, WP, CP	1	2	45	0.880000E+00	0.995200E+00	0.000000E+00 0.957696E-02
, IS, N1, XP, UP, WP, CP	1	2	46	0.900000E+00	0.983310E+00	0.000000E+00 0.331014E-01
, IS, N1, XP, UP, WP, CP	1	2	47	0.920000E+00	0.969630E+00	0.000000E+00 0.598177E-01
, IS, N1, XP, UP, WP, CP	1	2	48	0.940000E+00	0.954240E+00	0.000000E+00 0.894260E-01
, IS, N1, XP, UP, WP, CP	1	2	49	0.960000E+00	0.941290E+00	0.000000E+00 0.113973E+00
, IS, N1, XP, UP, WP, CP	1	2	50	0.980000E+00	0.933460E+00	0.000000E+00 0.128652E+00
, IS, N1, XP, UP, WP, CP	1	2	51	0.100000E+01	0.930840E+00	0.000000E+00 0.133537E+00
, IS, N1, XP, UP, WP, CP	1	2	52	0.102000E+01	0.933460E+00	0.000000E+00 0.128652E+00
, IS, N1, XP, UP, WP, CP	1	2	53	0.112274E+01	0.936810E+00	0.000000E+00 0.122387E+00
, IS, N1, XP, UP, WP, CP	1	2	54	0.135473E+01	0.971850E+00	0.000000E+00 0.555076E-01
, IS, N1, XP, UP, WP, CP	1	2	55	0.235080E+01	0.987070E+00	0.000000E+00 0.256928E-01
, IS, N1, XP, UP, WP, CP	1	2	56	0.317695E+01	0.993940E+00	0.000000E+00 0.120833E-01
, IS, N1, XP, UP, WP, CP	1	2	57	0.425898E+01	0.997070E+00	0.000000E+00 0.585142E-02
, IS, N1, XP, UP, WP, CP	1	2	58	0.562249E+01	0.998560E+00	0.000000E+00 0.287793E-02
, IS, N1, XP, UP, WP, CP	1	2	59	0.729170E+01	0.999310E+00	0.000000E+00 0.137952E-02
, IS, N1, XP, UP, WP, CP	1	2	60	0.928970E+01	0.999710E+00	0.000000E+00 0.579916E-03
, IS, N1, XP, UP, WP, CP	1	2	61	0.116386E+02	0.999940E+00	0.000000E+00 0.119996E-03
, IS, N1, XP, UP, WP, CP	1	2	62	0.143597E+02	0.100010E+01	0.000000E+00-0.200010E-03
, IS, N1, XP, UP, WP, CP	1	2	63	0.174735E+02	0.100020E+01	0.000000E+00-0.400040E-03

J1	X1	UEDGE	UEPHYS	PE	DPEDX	CP
62	0.100006750E+00	0.1235800098E+01	0.8577434812E+03	0.1739387414E+01	-0.3136289360E-02	0.3681021936E+00
63	0.1175031674E+00	0.1238337959E+01	0.8595049587E+03	0.1736538136E+01	0.0000000000E+00	-0.5334809014E+00
64	0.1350121327E+00	0.1238775061E+01	0.8598083418E+03	0.1736047146E+01	0.0000000000E+00	-0.5345636509E+00
65	0.1525408698E+00	0.1237608617E+01	0.8589987375E+03	0.1737357231E+01	0.0000000000E+00	-0.5316750898E+00
66	0.1701238857E+00	0.1235178939E+01	0.8573123479E+03	0.1740084410E+01	0.0000000000E+00	-0.5256670124E+00
67	0.1878408667E+00	0.1231814214E+01	0.8549769608E+03	0.1743857308E+01	0.0000000000E+00	-0.5173662570E+00
68	0.2058551479E+00	0.1227736213E+01	0.8521465043E+03	0.1748424004E+01	0.0000000000E+00	-0.5073362088E+00
69	0.2244627011E+00	0.1222972757E+01	0.8488402873E+03	0.1753749872E+01	0.0000000000E+00	-0.4956623648E+00
70	0.2441347701E+00	0.1217480243E+01	0.8450280459E+03	0.1759879458E+01	0.0000000000E+00	-0.4822581417E+00
71	0.2655242487E+00	0.1211115104E+01	0.8406101338E+03	0.1766967351E+01	0.0000000000E+00	-0.4667997955E+00
72	0.2894050054E+00	0.1203690398E+01	0.8354567978E+03	0.1775213691E+01	0.0000000000E+00	-0.4488705749E+00
73	0.3165352457E+00	0.1194926045E+01	0.8293736402E+03	0.1784917637E+01	0.0000000000E+00	-0.4278482534E+00
74	0.3474765921E+00	0.1184695342E+01	0.8222727189E+03	0.1796202710E+01	0.0000000000E+00	-0.4035030525E+00
75	0.3824370062E+00	0.1172983603E+01	0.8141438415E+03	0.1809063907E+01	0.0000000000E+00	-0.3758905327E+00
76	0.4212083966E+00	0.1159995187E+01	0.8051288487E+03	0.1823253206E+01	0.0000000000E+00	-0.3455888342E+00
77	0.4632286996E+00	0.1146034529E+01	0.7954390425E+03	0.1838415371E+01	0.0000000000E+00	-0.3133951419E+00
78	0.5077381150E+00	0.1131346422E+01	0.7852443289E+03	0.1854264594E+01	0.0000000000E+00	-0.2799447267E+00
79	0.5539575750E+00	0.1116263788E+01	0.7747757823E+03	0.1870426113E+01	0.0000000000E+00	-0.2460448446E+00
80	0.6012190543E+00	0.1101009903E+01	0.7641883735E+03	0.1886650540E+01	0.0000000000E+00	-0.2122228057E+00
81	0.6490120466E+00	0.1085571085E+01	0.7534726070E+03	0.1902944348E+01	0.0000000000E+00	-0.1784645803E+00
82	0.6969499123E+00	0.1069806529E+01	0.7425307523E+03	0.1919445760E+01	0.0000000000E+00	-0.1444860093E+00
83	0.7446834720E+00	0.1053313950E+01	0.7310835918E+03	0.1936557537E+01	0.0000000000E+00	-0.1094702774E+00
84	0.7917962797E+00	0.1035740470E+01	0.7188861997E+03	0.1954614959E+01	0.0000000000E+00	-0.7275832023E-01
85	0.8377176425E+00	0.1016415649E+01	0.7054732385E+03	0.1974256008E+01	0.0000000000E+00	-0.3310077172E-01
86	0.8816913925E+00	0.9941944672E+00	0.6900499723E+03	0.1996552007E+01	0.0000000000E+00	0.1157736144E-01
87	0.9228324449E+00	0.9674504337E+00	0.6714874876E+03	0.2022961498E+01	0.0000000000E+00	0.6403965837E-01
88	0.9602767040E+00	0.9411816704E+00	0.6532548782E+03	0.2048432926E+01	0.0000000000E+00	0.1141770633E+00
89	0.9933847613E+00	0.9317065963E+00	0.6466784237E+03	0.2057502975E+01	0.0000000000E+00	0.1319228185E+00
90	0.1021919876E+01	0.9335226006E+00	0.6479388751E+03	0.2055769497E+01	0.0000000000E+00	0.1285355542E+00
91	0.1046118675E+01	0.9343116407E+00	0.6484865316E+03	0.2055015587E+01	0.0000000000E+00	0.1270617581E+00
92	0.1066620181E+01	0.9349801247E+00	0.6489505126E+03	0.2054376523E+01	0.0000000000E+00	0.1258121665E+00
93	0.1084287098E+01	0.9355561824E+00	0.6493503424E+03	0.2053825564E+01	0.0000000000E+00	0.1247346296E+00
94	0.1100000000E+01	0.9360685264E+00	0.6497059499E+03	0.2053335347E+01	0.0000000000E+00	0.1237757139E+00
95	0.1114502059E+01	0.9365413889E+00	0.6500341541E+03	0.2052882742E+01	0.0000000000E+00	0.1228902268E+00
96	0.1128330851E+01	0.9376544477E+00	0.6508067053E+03	0.2051816747E+01	0.0000000000E+00	0.1208041367E+00
97	0.1141828818E+01	0.9396931940E+00	0.6522217573E+03	0.2049861950E+01	0.0000000000E+00	0.1169767011E+00
98	0.1155202563E+01	0.9417131778E+00	0.6536237866E+03	0.2047922272E+01	0.0000000000E+00	0.1131762908E+00
99	0.1168610445E+01	0.9437383176E+00	0.6550293945E+03	0.2045974783E+01	0.0000000000E+00	0.1093579879E+00
00	0.1182288687E+01	0.9458042928E+00	0.6564633455E+03	0.2043985081E+01	0.0000000000E+00	0.1054542397E+00
01	0.1196763250E+01	0.9479905452E+00	0.6579807784E+03	0.2041876315E+01	0.0000000000E+00	0.1013139263E+00
02	0.1213218032E+01	0.9504758919E+00	0.6597058065E+03	0.2039475036E+01	0.0000000000E+00	0.9659557898E-01
03	0.1234067153E+01	0.9536249637E+00	0.6618915127E+03	0.2036426365E+01	0.0000000000E+00	0.9059942857E-01
04	0.1263671145E+01	0.9580963800E+00	0.6649950310E+03	0.2032085815E+01	0.0000000000E+00	0.8205132655E-01
05	0.1308938041E+01	0.9649335370E+00	0.6697405613E+03	0.2025422406E+01	0.0000000000E+00	0.6890326910E-01
06	0.1379347330E+01	0.9722261540E+00	0.6748022171E+03	0.2018280300E+01	0.0000000000E+00	0.5477630539E-01
07	0.1485914838E+01	0.9738545110E+00	0.6759324262E+03	0.2016680679E+01	0.0000000000E+00	0.5160739147E-01
08	0.1638949613E+01	0.9761928901E+00	0.6775554471E+03	0.2014380474E+01	0.0000000000E+00	0.4704744138E-01
09	0.1845094919E+01	0.9793428008E+00	0.6797417355E+03	0.2011276242E+01	0.0000000000E+00	0.4088767858E-01
10	0.2104758770E+01	0.9833104775E+00	0.6824956185E+03	0.2007356762E+01	0.0000000000E+00	0.3310050474E-01
11	0.2411154106E+01	0.9875718855E+00	0.6854533743E+03	0.2003135588E+01	0.0000000000E+00	0.2470177096E-01
12	0.2751566734E+01	0.9904026484E+00	0.6874181487E+03	0.2000324986E+01	0.0000000000E+00	0.1910259407E-01
13	0.3110458217E+01	0.9933870755E+00	0.6894895783E+03	0.1997356168E+01	0.0000000000E+00	0.1318211816E-01
14	0.3473173528E+01	0.9947968890E+00	0.6904681009E+03	0.1995951720E+01	0.0000000000E+00	0.1037914957E-01
15	0.3828857155E+01	0.9958257789E+00	0.6911822323E+03	0.1994925935E+01	0.0000000000E+00	0.8331017980E-02
16	0.4171705940E+01	0.9968175414E+00	0.6918705942E+03	0.1993936518E+01	0.0000000000E+00	0.6354789212E-02

117	0.4500520871E+01	0.9973339481E+00	0.6922290216E+03	0.1993421082E+01	0.0000000000E+00	0.5324995933E-02
118	0.4817184001E+01	0.9976799874E+00	0.6924692003E+03	0.1993075597E+01	0.0000000000E+00	0.4634642682E-02

J1	X1	UEDGE	UEPHYS	PE	DPEDX	CP
57	0.1000006750E+00	0.1235800098E+01	0.8577434812E+03	0.1739387414E+01	-0.3136289360E-02	0.4634642682E-02
56	0.1175031674E+00	0.1238337959E+01	0.8595049587E+03	0.1736538136E+01	0.0000000000E+00	-0.5334809014E+00
55	0.1350121327E+00	0.1238775061E+01	0.8598083418E+03	0.1736047146E+01	0.0000000000E+00	-0.5345636509E+00
54	0.1525408698E+00	0.1237608617E+01	0.8589987375E+03	0.1737357231E+01	0.0000000000E+00	-0.5316750898E+00
53	0.1701238857E+00	0.1235178939E+01	0.8573123479E+03	0.1740084410E+01	0.0000000000E+00	-0.5256670124E+00
52	0.1878408667E+00	0.1231814214E+01	0.8549769608E+03	0.1743857308E+01	0.0000000000E+00	-0.5173662570E+00
51	0.2058551479E+00	0.1227736213E+01	0.8521465043E+03	0.1748424004E+01	0.0000000000E+00	-0.5073362088E+00
50	0.2244627011E+00	0.1222972757E+01	0.8488402873E+03	0.1753749872E+01	0.0000000000E+00	-0.4956623648E+00
49	0.2441347701E+00	0.1217480243E+01	0.8450280459E+03	0.1759879458E+01	0.0000000000E+00	-0.4822581417E+00
48	0.2655242487E+00	0.1211115104E+01	0.8406101338E+03	0.1766967351E+01	0.0000000000E+00	-0.4667997955E+00
47	0.2894050054E+00	0.1203690398E+01	0.8354567978E+03	0.1775213691E+01	0.0000000000E+00	-0.4488705749E+00
46	0.3165352457E+00	0.1194926045E+01	0.8293736402E+03	0.1784917637E+01	0.0000000000E+00	-0.4278482534E+00
45	0.3474765921E+00	0.1184695342E+01	0.8222727189E+03	0.1796202710E+01	0.0000000000E+00	-0.4035030525E+00
44	0.3824370062E+00	0.1172983603E+01	0.8141438415E+03	0.1809063907E+01	0.0000000000E+00	-0.3758905327E+00
43	0.4212083966E+00	0.1159995187E+01	0.8051288487E+03	0.1823253206E+01	0.0000000000E+00	-0.3455888342E+00
42	0.4632286996E+00	0.1146034529E+01	0.7954390425E+03	0.1838415371E+01	0.0000000000E+00	-0.3133951419E+00
41	0.5077381150E+00	0.1131346422E+01	0.7852443289E+03	0.1854264594E+01	0.0000000000E+00	-0.2799447267E+00
40	0.5539575750E+00	0.1116263788E+01	0.7747757823E+03	0.1870426113E+01	0.0000000000E+00	-0.2460448446E+00
39	0.6012190543E+00	0.1101009903E+01	0.7641883735E+03	0.1886650540E+01	0.0000000000E+00	-0.2122228057E+00
38	0.6490120466E+00	0.1085571085E+01	0.7534726070E+03	0.1902944348E+01	0.0000000000E+00	-0.1784645803E+00
37	0.6969499123E+00	0.1069806529E+01	0.7425307523E+03	0.1919445760E+01	0.0000000000E+00	-0.1444860093E+00
36	0.7446834720E+00	0.1053313950E+01	0.7310835918E+03	0.1936557537E+01	0.0000000000E+00	-0.1094702774E+00
35	0.7917962797E+00	0.1035740470E+01	0.7188861997E+03	0.1954614959E+01	0.0000000000E+00	-0.7275832023E-01
34	0.8377176425E+00	0.1016415649E+01	0.7054732385E+03	0.1974256008E+01	0.0000000000E+00	-0.3310077172E-01
33	0.8816913925E+00	0.9941944672E+00	0.6900499723E+03	0.1996552007E+01	0.0000000000E+00	0.1157736144E-01
32	0.9228324449E+00	0.9674504337E+00	0.6714874876E+03	0.2022961498E+01	0.0000000000E+00	0.6403965837E-01
31	0.9602767040E+00	0.9411816704E+00	0.6532548782E+03	0.2048432926E+01	0.0000000000E+00	0.1141770633E+00
30	0.9933847613E+00	0.9317065963E+00	0.6466784237E+03	0.2057502975E+01	0.0000000000E+00	0.1319228185E+00
29	0.1021919876E+01	0.9335226006E+00	0.6479388751E+03	0.2055769497E+01	0.0000000000E+00	0.1285355542E+00
28	0.1046118675E+01	0.9343116407E+00	0.6484865316E+03	0.2055015587E+01	0.0000000000E+00	0.1270617581E+00
27	0.1066620181E+01	0.9349801247E+00	0.6489505126E+03	0.2054376523E+01	0.0000000000E+00	0.1258121665E+00
26	0.1084287098E+01	0.9355561824E+00	0.6493503424E+03	0.2053825564E+01	0.0000000000E+00	0.1247346296E+00
25	0.1100000000E+01	0.9360685264E+00	0.6497059499E+03	0.2053335347E+01	0.0000000000E+00	0.1237757139E+00
24	0.1114502059E+01	0.9365413889E+00	0.6500341541E+03	0.2052882742E+01	0.0000000000E+00	0.1228902268E+00
23	0.1128330851E+01	0.9376544477E+00	0.6508067053E+03	0.2051816747E+01	0.0000000000E+00	0.1208041367E+00
22	0.1141828818E+01	0.9396931940E+00	0.6522217573E+03	0.2049861950E+01	0.0000000000E+00	0.1169767011E+00
21	0.1155202563E+01	0.9417131778E+00	0.6536237866E+03	0.2047922272E+01	0.0000000000E+00	0.1131762908E+00
20	0.1168610445E+01	0.9437383176E+00	0.6550293945E+03	0.2045974783E+01	0.0000000000E+00	0.1093579879E+00
19	0.1182288687E+01	0.9458042928E+00	0.6564633455E+03	0.2043985081E+01	0.0000000000E+00	0.1054542397E+00
18	0.1196763250E+01	0.9479905452E+00	0.6579807784E+03	0.2041876315E+01	0.0000000000E+00	0.1013139263E+00
17	0.1213218032E+01	0.9504758919E+00	0.6597058065E+03	0.2039475036E+01	0.0000000000E+00	0.9659557898E-01
16	0.1234067153E+01	0.9536249637E+00	0.6618915127E+03	0.2036426365E+01	0.0000000000E+00	0.9059942857E-01
15	0.1263671145E+01	0.9580963800E+00	0.6649950310E+03	0.2032085815E+01	0.0000000000E+00	0.8205132655E-01
14	0.1308938041E+01	0.9649335370E+00	0.6697405613E+03	0.2025422406E+01	0.0000000000E+00	0.6890326910E-01
13	0.1379347330E+01	0.9722261540E+00	0.6748022171E+03	0.2018280300E+01	0.0000000000E+00	0.5477630539E-01
12	0.1485914838E+01	0.9738545110E+00	0.6759324262E+03	0.2016680679E+01	0.0000000000E+00	0.5160739147E-01
11	0.1638949613E+01	0.9761928901E+00	0.6775554471E+03	0.2014380474E+01	0.0000000000E+00	0.4704744138E-01
10	0.1845094919E+01	0.9793428008E+00	0.6797417355E+03	0.2011276242E+01	0.0000000000E+00	0.4088767858E-01
9	0.2104758770E+01	0.9833104775E+00	0.6824956185E+03	0.2007356762E+01	0.0000000000E+00	0.3310050474E-01
8	0.2411154106E+01	0.9875718855E+00	0.6854533743E+03	0.2003135588E+01	0.0000000000E+00	0.2470177096E-01
7	0.2751566734E+01	0.9904026484E+00	0.6874181487E+03	0.2000324986E+01	0.0000000000E+00	0.1910259407E-01
6	0.3110458217E+01	0.9933870755E+00	0.6894895783E+03	0.1997356168E+01	0.0000000000E+00	0.1318211816E-01
5	0.3473173528E+01	0.9947968890E+00	0.6904681009E+03	0.1995951720E+01	0.0000000000E+00	0.1037914957E-01
4	0.3828857155E+01	0.9958257789E+00	0.6911822323E+03	0.1994925935E+01	0.0000000000E+00	0.8331017980E-02
3	0.4171705940E+01	0.9968175414E+00	0.6918705942E+03	0.1993936518E+01	0.0000000000E+00	0.6354789212E-02

2	0.4500520871E+01	0.9973339481E+00	0.6922290216E+03	0.1993421082E+01	0.0000000000E+00	0.5324995933E-02
1	0.4817184001E+01	0.9976799874E+00	0.6924692003E+03	0.1993075597E+01	0.0000000000E+00	0.4634642682E-02

P R E S S U R E D A T A

***** DPDX(1) *****

=	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

1 = 0.4817E+01 0.4501E+01 0.4172E+01 0.3829E+01 0.3473E+01 0.3110E+01 0.2752E+01 0.2411E+01 0.2105E+01 0.1845E+01

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	11	12	13	14	15	16	17	18	19	20
---	----	----	----	----	----	----	----	----	----	----

1 = 0.1639E+01 0.1486E+01 0.1379E+01 0.1309E+01 0.1264E+01 0.1234E+01 0.1213E+01 0.1197E+01 0.1182E+01 0.1169E+01

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	21	22	23	24	25	26	27	28	29	30
---	----	----	----	----	----	----	----	----	----	----

1 = 0.1155E+01 0.1142E+01 0.1128E+01 0.1115E+01 0.1100E+01 0.1084E+01 0.1067E+01 0.1046E+01 0.1022E+01 0.9934E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	31	32	33	34	35	36	37	38	39	40
---	----	----	----	----	----	----	----	----	----	----

1 = 0.9603E+00 0.9228E+00 0.8817E+00 0.8377E+00 0.7918E+00 0.7447E+00 0.6969E+00 0.6490E+00 0.6012E+00 0.5540E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	41	42	43	44	45	46	47	48	49	50
---	----	----	----	----	----	----	----	----	----	----

1 = 0.5077E+00 0.4632E+00 0.4212E+00 0.3824E+00 0.3475E+00 0.3165E+00 0.2894E+00 0.2655E+00 0.2441E+00 0.2245E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

```

=      51      52      53      54      55      56      57      58      59      60
·1 =  0.2059E+00  0.1878E+00  0.1701E+00  0.1525E+00  0.1350E+00  0.1175E+00  0.1000E+00  0.8250E-01  0.6500E-01  0.6500E-01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00-0.31363E-02  0.00000E+00  0.00000E+00  0.00000E+00

=      61      62      63      64      65      66      67      68      69      70
·1 =  0.8250E-01  0.1000E+00  0.1175E+00  0.1350E+00  0.1525E+00  0.1701E+00  0.1878E+00  0.2059E+00  0.2245E+00  0.2441E+00

1   0.00000E+00-0.31363E-02  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=      71      72      73      74      75      76      77      78      79      80
·1 =  0.2655E+00  0.2894E+00  0.3165E+00  0.3475E+00  0.3824E+00  0.4212E+00  0.4632E+00  0.5077E+00  0.5540E+00  0.6012E+00

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=      81      82      83      84      85      86      87      88      89      90
·1 =  0.6490E+00  0.6969E+00  0.7447E+00  0.7918E+00  0.8377E+00  0.8817E+00  0.9228E+00  0.9603E+00  0.9934E+00  0.1022E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=      91      92      93      94      95      96      97      98      99      100
·1 =  0.1046E+01  0.1067E+01  0.1084E+01  0.1100E+01  0.1115E+01  0.1128E+01  0.1142E+01  0.1155E+01  0.1169E+01  0.1182E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00
```

```

=      101       102       103       104       105       106       107       108       109       110
1 =  0.1197E+01  0.1213E+01  0.1234E+01  0.1264E+01  0.1309E+01  0.1379E+01  0.1486E+01  0.1639E+01  0.1845E+01  0.2105E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=      111       112       113       114       115       116       117       118
1 =  0.2411E+01  0.2752E+01  0.3110E+01  0.3473E+01  0.3829E+01  0.4172E+01  0.4501E+01  0.4817E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

***** DPDX(2) *****
=      1         2         3         4         5         6         7         8         9         10
1 =  0.4817E+01  0.4501E+01  0.4172E+01  0.3829E+01  0.3473E+01  0.3110E+01  0.2752E+01  0.2411E+01  0.2105E+01  0.1845E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=     11        12        13        14        15        16        17        18        19        20
1 =  0.1639E+01  0.1486E+01  0.1379E+01  0.1309E+01  0.1264E+01  0.1234E+01  0.1213E+01  0.1197E+01  0.1182E+01  0.1169E+01

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=     21        22        23        24        25        26        27        28        29        30
1 =  0.1155E+01  0.1142E+01  0.1128E+01  0.1115E+01  0.1100E+01  0.1084E+01  0.1067E+01  0.1046E+01  0.1022E+01  0.9934E+00

1   0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00  0.00000E+00

=     31        32        33        34        35        36        37        38        39        40

```

-1 = 0.9603E+00 0.9228E+00 0.8817E+00 0.8377E+00 0.7918E+00 0.7447E+00 0.6969E+00 0.6490E+00 0.6012E+00 0.5540E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

= 41 42 43 44 45 46 47 48 49 50

-1 = 0.5077E+00 0.4632E+00 0.4212E+00 0.3824E+00 0.3475E+00 0.3165E+00 0.2894E+00 0.2655E+00 0.2441E+00 0.2245E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

= 51 52 53 54 55 56 57 58 59 60

-1 = 0.2059E+00 0.1878E+00 0.1701E+00 0.1525E+00 0.1350E+00 0.1175E+00 0.1000E+00 0.8250E-01 0.6500E-01 0.6500E-01

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

= 61 62 63 64 65 66 67 68 69 70

-1 = 0.8250E-01 0.1000E+00 0.1175E+00 0.1350E+00 0.1525E+00 0.1701E+00 0.1878E+00 0.2059E+00 0.2245E+00 0.2441E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

= 71 72 73 74 75 76 77 78 79 80

-1 = 0.2655E+00 0.2894E+00 0.3165E+00 0.3475E+00 0.3824E+00 0.4212E+00 0.4632E+00 0.5077E+00 0.5540E+00 0.6012E+00

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

= 81 82 83 84 85 86 87 88 89 90

-1 = 0.6490E+00 0.6969E+00 0.7447E+00 0.7918E+00 0.8377E+00 0.8817E+00 0.9228E+00 0.9603E+00 0.9934E+00 0.1022E+01

1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	91	92	93	94	95	96	97	98	99	100	
I =	0.1046E+01	0.1067E+01	0.1084E+01	0.1100E+01	0.1115E+01	0.1128E+01	0.1142E+01	0.1155E+01	0.1169E+01	0.1182E+01	
I	-	0.00000E+00									
=	101	102	103	104	105	106	107	108	109	110	
I =	0.1197E+01	0.1213E+01	0.1234E+01	0.1264E+01	0.1309E+01	0.1379E+01	0.1486E+01	0.1639E+01	0.1845E+01	0.2105E+01	
I	-	0.00000E+00									
=	111	112	113	114	115	116	117	118			
I =	0.2411E+01	0.2752E+01	0.3110E+01	0.3473E+01	0.3829E+01	0.4172E+01	0.4501E+01	0.4817E+01			
I	-	0.00000E+00									
***** PRESSURE *****											
=	1	2	3	4	5	6	7	8	9	10	
I =	0.4817E+01	0.4501E+01	0.4172E+01	0.3829E+01	0.3473E+01	0.3110E+01	0.2752E+01	0.2411E+01	0.2105E+01	0.1845E+01	
I	-	0.19931E+01	0.19934E+01	0.19939E+01	0.19949E+01	0.19960E+01	0.19974E+01	0.20003E+01	0.20031E+01	0.20074E+01	0.20113E+01
=	11	12	13	14	15	16	17	18	19	20	
I =	0.1639E+01	0.1486E+01	0.1379E+01	0.1309E+01	0.1264E+01	0.1234E+01	0.1213E+01	0.1197E+01	0.1182E+01	0.1169E+01	
I	-	0.20144E+01	0.20167E+01	0.20183E+01	0.20254E+01	0.20321E+01	0.20364E+01	0.20395E+01	0.20419E+01	0.20440E+01	0.20460E+01

= 21 22 23 24 25 26 27 28 29 30
 -1 = 0.1155E+01 0.1142E+01 0.1128E+01 0.1115E+01 0.1100E+01 0.1084E+01 0.1067E+01 0.1046E+01 0.1022E+01 0.9934E+00
 1 0.20479E+01 0.20499E+01 0.20518E+01 0.20529E+01 0.20533E+01 0.20538E+01 0.20544E+01 0.20550E+01 0.20558E+01 0.20575E+01
 .
 = 31 32 33 34 35 36 37 38 39 40
 -1 = 0.9603E+00 0.9228E+00 0.8817E+00 0.8377E+00 0.7918E+00 0.7447E+00 0.6969E+00 0.6490E+00 0.6012E+00 0.5540E+00
 1 0.20484E+01 0.20230E+01 0.19966E+01 0.19743E+01 0.19546E+01 0.19366E+01 0.19194E+01 0.19029E+01 0.18867E+01 0.18704E+01
 .
 = 41 42 43 44 45 46 47 48 49 50
 -1 = 0.5077E+00 0.4632E+00 0.4212E+00 0.3824E+00 0.3475E+00 0.3165E+00 0.2894E+00 0.2655E+00 0.2441E+00 0.2245E+00
 1 0.18543E+01 0.18384E+01 0.18233E+01 0.18091E+01 0.17962E+01 0.17849E+01 0.17752E+01 0.17670E+01 0.17599E+01 0.17537E+01
 .
 = 51 52 53 54 55 56 57 58 59 60
 -1 = 0.2059E+00 0.1878E+00 0.1701E+00 0.1525E+00 0.1350E+00 0.1175E+00 0.1000E+00 0.8250E-01 0.6500E-01 0.6500E-01
 1 0.17484E+01 0.17439E+01 0.17401E+01 0.17374E+01 0.17360E+01 0.17365E+01 0.17394E+01 0.00000E+00 0.00000E+00 0.00000E+00
 .
 = 61 62 63 64 65 66 67 68 69 70
 -1 = 0.8250E-01 0.1000E+00 0.1175E+00 0.1350E+00 0.1525E+00 0.1701E+00 0.1878E+00 0.2059E+00 0.2245E+00 0.2441E+00
 1 0.00000E+00 0.17394E+01 0.17365E+01 0.17360E+01 0.17374E+01 0.17401E+01 0.17439E+01 0.17484E+01 0.17537E+01 0.17599E+01
 .
 = 71 72 73 74 75 76 77 78 79 80
 -1 = 0.2655E+00 0.2894E+00 0.3165E+00 0.3475E+00 0.3824E+00 0.4212E+00 0.4632E+00 0.5077E+00 0.5540E+00 0.6012E+00

1 0.17670E+01 0.17752E+01 0.17849E+01 0.17962E+01 0.18091E+01 0.18233E+01 0.18384E+01 0.18543E+01 0.18704E+01 0.18867E+01
 = 81 82 83 84 85 86 87 88 89 90
 -1 = 0.6490E+00 0.6969E+00 0.7447E+00 0.7918E+00 0.8377E+00 0.8817E+00 0.9228E+00 0.9603E+00 0.9934E+00 0.1022E+01
 1 0.19029E+01 0.19194E+01 0.19366E+01 0.19546E+01 0.19743E+01 0.19966E+01 0.20230E+01 0.20484E+01 0.20575E+01 0.20558E+01
 = 91 92 93 94 95 96 97 98 99 100
 -1 = 0.1046E+01 0.1067E+01 0.1084E+01 0.1100E+01 0.1115E+01 0.1128E+01 0.1142E+01 0.1155E+01 0.1169E+01 0.1182E+01
 1 0.20550E+01 0.20544E+01 0.20538E+01 0.20533E+01 0.20529E+01 0.20518E+01 0.20499E+01 0.20479E+01 0.20460E+01 0.20440E+01
 = 101 102 103 104 105 106 107 108 109 110
 -1 = 0.1197E+01 0.1213E+01 0.1234E+01 0.1264E+01 0.1309E+01 0.1379E+01 0.1486E+01 0.1639E+01 0.1845E+01 0.2105E+01
 1 0.20419E+01 0.20395E+01 0.20364E+01 0.20321E+01 0.20254E+01 0.20183E+01 0.20167E+01 0.20144E+01 0.20113E+01 0.20074E+01
 = 111 112 113 114 115 116 117 118
 -1 = 0.2411E+01 0.2752E+01 0.3110E+01 0.3473E+01 0.3829E+01 0.4172E+01 0.4501E+01 0.4817E+01
 1 0.20031E+01 0.20003E+01 0.19974E+01 0.19960E+01 0.19949E+01 0.19939E+01 0.19934E+01 0.19931E+01

REINF = 0.480000E+07 DELTAT = 0.140982E-02 CFT = 0.410000E-02 UTAUN = 0.501461E-01 PIXDK = 0.302949E+01

J3	X3	YPLUS	UPLUS	DFF
1	0.4406940174E-01	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00
2	0.4407380867E-01	0.6686016851E+00	0.6691917864E+00	0.3355732571E-01
3	0.4407920485E-01	0.1487287458E+01	0.1487335726E+01	0.7458401374E-01
4	0.4408581231E-01	0.2489742891E+01	0.2482193237E+01	0.1244721896E+00
5	0.4409390289E-01	0.3717211854E+01	0.3672817011E+01	0.1841772706E+00
6	0.4410380944E-01	0.5220191309E+01	0.5049848048E+01	0.2532299398E+00
7	0.4411593945E-01	0.7060505583E+01	0.6549762108E+01	0.3284447073E+00
8	0.4413079182E-01	0.9313844757E+01	0.8053320218E+01	0.4038422096E+00
9	0.4414897731E-01	0.1207287067E+02	0.9437214892E+01	0.4732390630E+00
10	0.4417124359E-01	0.1545101677E+02	0.1063816903E+02	0.5334621707E+00
11	0.4419850587E-01	0.1958713592E+02	0.1166290739E+02	0.5848487534E+00
12	0.4423188439E-01	0.2465118394E+02	0.1255546269E+02	0.6296068774E+00
13	0.4427275017E-01	0.3085116758E+02	0.1336780545E+02	0.6703426592E+00
14	0.4432278100E-01	0.3844163505E+02	0.1414813513E+02	0.7094731112E+00
15	0.4438402981E-01	0.4773404684E+02	0.1494005549E+02	0.7491847904E+00
16	0.4445900809E-01	0.5910943610E+02	0.1578533291E+02	0.7915721154E+00
17	0.4455078771E-01	0.7303385332E+02	0.1672642621E+02	0.8387642285E+00
18	0.4466312498E-01	0.9007719169E+02	0.1780643122E+02	0.8929222152E+00
19	0.4480061178E-01	0.1109361091E+03	0.1906332678E+02	0.9559505644E+00
20	0.4496885921E-01	0.1364619022E+03	0.2051254109E+02	0.1028622940E+01
21	0.4517472076E-01	0.1676943491E+03	0.2210595600E+02	0.1108526405E+01
22	0.4542656249E-01	0.2059027168E+03	0.2364421162E+02	0.1185663851E+01
23	0.4573458985E-01	0.2526353314E+03	0.2459806888E+02	0.1233496026E+01
24	0.4611124138E-01	0.3097793162E+03	0.2464401610E+02	0.1235800098E+01
25	0.4657166147E-01	0.3796323140E+03	0.2464401610E+02	0.1235800098E+01
26	0.4713426527E-01	0.4649881937E+03	0.2464401610E+02	0.1235800098E+01
27	0.4782140974E-01	0.5692388599E+03	0.2464401610E+02	0.1235800098E+01
28	0.4866018484E-01	0.6964942874E+03	0.2464401610E+02	0.1235800098E+01
29	0.4968333740E-01	0.8517226868E+03	0.2464401610E+02	0.1235800098E+01
30	0.5093033656E-01	0.1040912150E+04	0.2464401610E+02	0.1235800098E+01
31	0.5244858244E-01	0.1271254024E+04	0.2464401610E+02	0.1235800098E+01
32	0.5429474727E-01	0.1551346381E+04	0.2464401610E+02	0.1235800098E+01
33	0.5653621794E-01	0.1891412875E+04	0.2464401610E+02	0.1235800098E+01
34	0.5925257871E-01	0.2303527696E+04	0.2464401610E+02	0.1235800098E+01
35	0.6253702831E-01	0.2801830564E+04	0.2464401610E+02	0.1235800098E+01
36	0.6649756469E-01	0.3402706471E+04	0.2464401610E+02	0.1235800098E+01
37	0.7125769008E-01	0.4124892657E+04	0.2464401610E+02	0.1235800098E+01
38	0.7695629082E-01	0.4989460372E+04	0.2464401610E+02	0.1235800098E+01
39	0.8374623628E-01	0.6019602315E+04	0.2464401610E+02	0.1235800098E+01
40	0.9179113766E-01	0.7240140887E+04	0.2464401610E+02	0.1235800098E+01
41	0.1012596425E+00	0.8676662586E+04	0.2464401610E+02	0.1235800098E+01
42	0.1123166667E+00	0.1035418775E+05	0.2464401610E+02	0.1235800098E+01
43	0.1251111525E+00	0.1229531328E+05	0.2464401610E+02	0.1235800098E+01
44	0.1397603634E+00	0.1451782989E+05	0.2464401610E+02	0.1235800098E+01
45	0.1563314361E+00	0.1703192328E+05	0.2464401610E+02	0.1235800098E+01
46	0.1748218777E+00	0.1983721525E+05	0.2464401610E+02	0.1235800098E+01
47	0.1951417729E+00	0.2292006420E+05	0.2464401610E+02	0.1235800098E+01
48	0.2171013201E+00	0.2625167427E+05	0.2464401610E+02	0.1235800098E+01
49	0.2404075218E+00	0.2978759308E+05	0.2464401610E+02	0.1235800098E+01

REINF = 0.480000E+07 DELTAT = 0.140982E-02 CFT = 0.410000E-02 UTAUN = 0.501461E-01 PIXDK = 0.302949E+01

J3	X3	YPLUS	UPLUS	DFF
1	-0.4406940174E-01	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00
2	-0.4407380867E-01	0.6686016851E+00	0.6691917864E+00	0.3355732571E-01
3	-0.4407920485E-01	0.1487287458E+01	0.1487335726E+01	0.7458401374E-01
4	-0.4408581231E-01	0.2489742891E+01	0.2482193237E+01	0.1244721896E+00
5	-0.4409390289E-01	0.3717211854E+01	0.3672817011E+01	0.1841772706E+00
6	-0.4410380944E-01	0.5220191309E+01	0.5049848048E+01	0.2532299398E+00
7	-0.4411593945E-01	0.7060505583E+01	0.6549762108E+01	0.3284447073E+00
8	-0.4413079182E-01	0.9313844757E+01	0.8053320218E+01	0.4038422096E+00
9	-0.4414897731E-01	0.1207287067E+02	0.9437214892E+01	0.4732390630E+00
10	-0.4417124359E-01	0.1545101677E+02	0.1063816903E+02	0.5334621707E+00
11	-0.4419850587E-01	0.1958713592E+02	0.1166290739E+02	0.5848487534E+00
12	-0.4423188439E-01	0.2465118394E+02	0.1255546269E+02	0.6296068774E+00
13	-0.4427275017E-01	0.3085116758E+02	0.1336780545E+02	0.6703426592E+00
14	-0.4432278100E-01	0.3844163505E+02	0.1414813513E+02	0.7094731112E+00
15	-0.4438402981E-01	0.4773404684E+02	0.1494005549E+02	0.7491847904E+00
16	-0.4445900809E-01	0.5910943610E+02	0.1578533291E+02	0.7915721154E+00
17	-0.4455078771E-01	0.7303385332E+02	0.1672642621E+02	0.8387642285E+00
18	-0.4466312498E-01	0.9007719169E+02	0.1780643122E+02	0.8929222152E+00
19	-0.4480061178E-01	0.1109361091E+03	0.1906332678E+02	0.9559505644E+00
20	-0.4496885921E-01	0.1364619022E+03	0.2051254109E+02	0.1028622940E+01
21	-0.4517472076E-01	0.1676943491E+03	0.2210595600E+02	0.1108526405E+01
22	-0.4542656249E-01	0.2059027168E+03	0.2364421162E+02	0.1185663851E+01
23	-0.4573458985E-01	0.2526353314E+03	0.2459806888E+02	0.1233496026E+01
24	-0.4611124138E-01	0.3097793162E+03	0.2464401610E+02	0.1235800098E+01
25	-0.4657166147E-01	0.3796323140E+03	0.2464401610E+02	0.1235800098E+01
26	-0.4713426527E-01	0.4649881937E+03	0.2464401610E+02	0.1235800098E+01
27	-0.4782140974E-01	0.5692388599E+03	0.2464401610E+02	0.1235800098E+01
28	-0.4866018484E-01	0.6964942874E+03	0.2464401610E+02	0.1235800098E+01
29	-0.4968333740E-01	0.8517226868E+03	0.2464401610E+02	0.1235800098E+01
30	-0.5093033656E-01	0.1040912150E+04	0.2464401610E+02	0.1235800098E+01
31	-0.5244858244E-01	0.1271254024E+04	0.2464401610E+02	0.1235800098E+01
32	-0.5429474727E-01	0.1551346381E+04	0.2464401610E+02	0.1235800098E+01
33	-0.5653621794E-01	0.1891412875E+04	0.2464401610E+02	0.1235800098E+01
34	-0.5925257871E-01	0.2303527696E+04	0.2464401610E+02	0.1235800098E+01
35	-0.6253702831E-01	0.2801830564E+04	0.2464401610E+02	0.1235800098E+01
36	-0.6649756469E-01	0.3402706471E+04	0.2464401610E+02	0.1235800098E+01
37	-0.7125769008E-01	0.4124892657E+04	0.2464401610E+02	0.1235800098E+01
38	-0.7695629082E-01	0.4989460372E+04	0.2464401610E+02	0.1235800098E+01
39	-0.8374623628E-01	0.6019602315E+04	0.2464401610E+02	0.1235800098E+01
40	-0.9179113766E-01	0.7240140887E+04	0.2464401610E+02	0.1235800098E+01
41	-0.1012596425E+00	0.8676662586E+04	0.2464401610E+02	0.1235800098E+01
42	-0.1123166667E+00	0.1035418775E+05	0.2464401610E+02	0.1235800098E+01
43	-0.1251111525E+00	0.1229531328E+05	0.2464401610E+02	0.1235800098E+01
44	-0.1397603634E+00	0.1451782989E+05	0.2464401610E+02	0.1235800098E+01
45	-0.1563314361E+00	0.1703192328E+05	0.2464401610E+02	0.1235800098E+01
46	-0.1748218777E+00	0.1983721525E+05	0.2464401610E+02	0.1235800098E+01
47	-0.1951417729E+00	0.2292006420E+05	0.2464401610E+02	0.1235800098E+01
48	-0.2171013201E+00	0.2625167427E+05	0.2464401610E+02	0.1235800098E+01
49	-0.2404075218E+00	0.2978759308E+05	0.2464401610E+02	0.1235800098E+01

CURRENT J2 PLANE = 1

J1 = 63	REINF = 0.4800000000E+07	DELTAT = 0.1603991006E-02	CFT = 0.3969853940E-02
J1 = 64	REINF = 0.4800000000E+07	DELTAT = 0.1792505546E-02	CFT = 0.3861089632E-02
J1 = 65	REINF = 0.4800000000E+07	DELTAT = 0.1976383615E-02	CFT = 0.3767967944E-02
J1 = 66	REINF = 0.4800000000E+07	DELTAT = 0.2156624352E-02	CFT = 0.3686645547E-02
J1 = 67	REINF = 0.4800000000E+07	DELTAT = 0.2334502464E-02	CFT = 0.3614318547E-02
J1 = 68	REINF = 0.4800000000E+07	DELTAT = 0.2511953846E-02	CFT = 0.3548722962E-02
J1 = 69	REINF = 0.4800000000E+07	DELTAT = 0.2692015882E-02	CFT = 0.3487832387E-02
J1 = 70	REINF = 0.4800000000E+07	DELTAT = 0.2879161189E-02	CFT = 0.3429718813E-02
J1 = 71	REINF = 0.4800000000E+07	DELTAT = 0.3079254756E-02	CFT = 0.3372590445E-02
J1 = 72	REINF = 0.4800000000E+07	DELTAT = 0.3298884425E-02	CFT = 0.3314997730E-02
J1 = 73	REINF = 0.4800000000E+07	DELTAT = 0.3544050731E-02	CFT = 0.3256117197E-02
J1 = 74	REINF = 0.4800000000E+07	DELTAT = 0.3818587203E-02	CFT = 0.3195945261E-02
J1 = 75	REINF = 0.4800000000E+07	DELTAT = 0.4122970219E-02	CFT = 0.3135252054E-02
J1 = 76	REINF = 0.4800000000E+07	DELTAT = 0.4454099207E-02	CFT = 0.3075282657E-02
J1 = 77	REINF = 0.4800000000E+07	DELTAT = 0.4806164561E-02	CFT = 0.3017347651E-02
J1 = 78	REINF = 0.4800000000E+07	DELTAT = 0.5172185388E-02	CFT = 0.2962487249E-02
J1 = 79	REINF = 0.4800000000E+07	DELTAT = 0.5545535302E-02	CFT = 0.2911314624E-02
J1 = 80	REINF = 0.4800000000E+07	DELTAT = 0.5920909988E-02	CFT = 0.2864032196E-02
J1 = 81	REINF = 0.4800000000E+07	DELTAT = 0.6294546937E-02	CFT = 0.2820550575E-02
J1 = 82	REINF = 0.4800000000E+07	DELTAT = 0.6663824090E-02	CFT = 0.2780635925E-02
J1 = 83	REINF = 0.4800000000E+07	DELTAT = 0.7026509567E-02	CFT = 0.2744037866E-02
J1 = 84	REINF = 0.4800000000E+07	DELTAT = 0.7379943474E-02	CFT = 0.2710577017E-02
J1 = 85	REINF = 0.4800000000E+07	DELTAT = 0.7720410619E-02	CFT = 0.2680185854E-02
J1 = 86	REINF = 0.4800000000E+07	DELTAT = 0.8042953368E-02	CFT = 0.2652901485E-02
J1 = 87	REINF = 0.4800000000E+07	DELTAT = 0.8341814997E-02	CFT = 0.2628814079E-02
J1 = 88	REINF = 0.4800000000E+07	DELTAT = 0.8611511471E-02	CFT = 0.2607985452E-02
J1 = 89	REINF = 0.4800000000E+07	DELTAT = 0.8848227182E-02	CFT = 0.2590364886E-02
J1 = 90	REINF = 0.4800000000E+07	DELTAT = 0.9050982952E-02	CFT = 0.2575734374E-02
J1 = 91	REINF = 0.4800000000E+07	DELTAT = 0.9222040689E-02	CFT = 0.2563706190E-02
J1 = 92	REINF = 0.4800000000E+07	DELTAT = 0.9366344065E-02	CFT = 0.2553774133E-02
J1 = 93	REINF = 0.4800000000E+07	DELTAT = 0.9490251068E-02	CFT = 0.2545397335E-02
J1 = 94	REINF = 0.4800000000E+07	DELTAT = 0.9600114615E-02	CFT = 0.2538083501E-02
J1 = 95	REINF = 0.4800000000E+07	DELTAT = 0.9701233777E-02	CFT = 0.2531443671E-02
J1 = 96	REINF = 0.4800000000E+07	DELTAT = 0.9797413554E-02	CFT = 0.2525207965E-02
J1 = 97	REINF = 0.4800000000E+07	DELTAT = 0.9891065316E-02	CFT = 0.2519209255E-02
J1 = 98	REINF = 0.4800000000E+07	DELTAT = 0.9983637072E-02	CFT = 0.2513349092E-02
J1 = 99	REINF = 0.4800000000E+07	DELTAT = 0.1007623020E-01	CFT = 0.2507555132E-02
J1 = 100	REINF = 0.4800000000E+07	DELTAT = 0.1017047173E-01	CFT = 0.2501725966E-02
J1 = 101	REINF = 0.4800000000E+07	DELTAT = 0.1026996268E-01	CFT = 0.2495644921E-02
J1 = 102	REINF = 0.4800000000E+07	DELTAT = 0.1038277291E-01	CFT = 0.2488838244E-02
J1 = 103	REINF = 0.4800000000E+07	DELTAT = 0.1052527142E-01	CFT = 0.2480371225E-02
J1 = 56	REINF = 0.4800000000E+07	DELTAT = 0.1603991006E-02	CFT = 0.3969853940E-02
J1 = 55	REINF = 0.4800000000E+07	DELTAT = 0.1792505546E-02	CFT = 0.3861089632E-02
J1 = 54	REINF = 0.4800000000E+07	DELTAT = 0.1976383615E-02	CFT = 0.3767967944E-02
J1 = 53	REINF = 0.4800000000E+07	DELTAT = 0.2156624352E-02	CFT = 0.3686645547E-02
J1 = 52	REINF = 0.4800000000E+07	DELTAT = 0.2334502464E-02	CFT = 0.3614318547E-02
J1 = 51	REINF = 0.4800000000E+07	DELTAT = 0.2511953846E-02	CFT = 0.3548722962E-02
J1 = 50	REINF = 0.4800000000E+07	DELTAT = 0.2692015882E-02	CFT = 0.3487832387E-02
J1 = 49	REINF = 0.4800000000E+07	DELTAT = 0.2879161189E-02	CFT = 0.3429718813E-02
J1 = 48	REINF = 0.4800000000E+07	DELTAT = 0.3079254756E-02	CFT = 0.3372590445E-02
J1 = 47	REINF = 0.4800000000E+07	DELTAT = 0.3298884425E-02	CFT = 0.3314997730E-02
J1 = 46	REINF = 0.4800000000E+07	DELTAT = 0.3544050731E-02	CFT = 0.3256117197E-02
J1 = 45	REINF = 0.4800000000E+07	DELTAT = 0.3818587203E-02	CFT = 0.3195945261E-02
J1 = 44	REINF = 0.4800000000E+07	DELTAT = 0.4122970219E-02	CFT = 0.3135252054E-02
J1 = 43	REINF = 0.4800000000E+07	DELTAT = 0.4454099207E-02	CFT = 0.3075282657E-02
J1 = 42	REINF = 0.4800000000E+07	DELTAT = 0.4806164561E-02	CFT = 0.3017347651E-02
J1 = 41	REINF = 0.4800000000E+07	DELTAT = 0.5172185388E-02	CFT = 0.2962487249E-02
J1 = 40	REINF = 0.4800000000E+07	DELTAT = 0.5545535302E-02	CFT = 0.2911314624E-02

J1 =	39	REINF =	0.4800000000E+07	DELTAT =	0.5920909988E-02	CFT =	0.2864032196E-02
J1 =	38	REINF =	0.4800000000E+07	DELTAT =	0.6294546937E-02	CFT =	0.2820550575E-02
J1 =	37	REINF =	0.4800000000E+07	DELTAT =	0.6663824090E-02	CFT =	0.2780635925E-02
J1 =	36	REINF =	0.4800000000E+07	DELTAT =	0.7026509567E-02	CFT =	0.2744037866E-02
J1 =	35	REINF =	0.4800000000E+07	DELTAT =	0.7379943474E-02	CFT =	0.2710577017E-02
J1 =	34	REINF =	0.4800000000E+07	DELTAT =	0.7720410619E-02	CFT =	0.2680185854E-02
J1 =	33	REINF =	0.4800000000E+07	DELTAT =	0.8042953368E-02	CFT =	0.2652901485E-02
J1 =	32	REINF =	0.4800000000E+07	DELTAT =	0.8341814997E-02	CFT =	0.2628814079E-02
J1 =	31	REINF =	0.4800000000E+07	DELTAT =	0.8611511471E-02	CFT =	0.2607985452E-02
J1 =	30	REINF =	0.4800000000E+07	DELTAT =	0.8848227182E-02	CFT =	0.2590364886E-02
J1 =	29	REINF =	0.4800000000E+07	DELTAT =	0.9050982952E-02	CFT =	0.2575734374E-02
J1 =	28	REINF =	0.4800000000E+07	DELTAT =	0.9222040689E-02	CFT =	0.2563706190E-02
J1 =	27	REINF =	0.4800000000E+07	DELTAT =	0.9366344065E-02	CFT =	0.2553774133E-02
J1 =	26	REINF =	0.4800000000E+07	DELTAT =	0.9490251068E-02	CFT =	0.2545397335E-02
J1 =	25	REINF =	0.4800000000E+07	DELTAT =	0.9600114615E-02	CFT =	0.2538083501E-02
J1 =	24	REINF =	0.4800000000E+07	DELTAT =	0.9701233777E-02	CFT =	0.2531443671E-02
J1 =	23	REINF =	0.4800000000E+07	DELTAT =	0.9797413554E-02	CFT =	0.2525207965E-02
J1 =	22	REINF =	0.4800000000E+07	DELTAT =	0.9891065316E-02	CFT =	0.2519209255E-02
J1 =	21	REINF =	0.4800000000E+07	DELTAT =	0.9983637072E-02	CFT =	0.2513349092E-02
J1 =	20	REINF =	0.4800000000E+07	DELTAT =	0.1007623020E-01	CFT =	0.2507555132E-02
J1 =	19	REINF =	0.4800000000E+07	DELTAT =	0.1017047173E-01	CFT =	0.2501725966E-02
J1 =	18	REINF =	0.4800000000E+07	DELTAT =	0.1026996268E-01	CFT =	0.2495644921E-02
J1 =	17	REINF =	0.4800000000E+07	DELTAT =	0.1038277291E-01	CFT =	0.2488838244E-02
J1 =	16	REINF =	0.4800000000E+07	DELTAT =	0.1052527142E-01	CFT =	0.2480371225E-02

INITIAL FLOWFIELD

***** U1 - VEL *****

=	1	2	3	4	5	6	7	8	9	10
-1	0.4817E+01	0.4501E+01	0.4172E+01	0.3829E+01	0.3473E+01	0.3110E+01	0.2752E+01	0.2411E+01	0.2105E+01	0.1845E+01
,										
.9	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.8	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.7	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.6	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.5	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.4	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.3	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.2	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.1	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.0	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.9	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.8	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.7	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.6	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.5	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.4	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.3	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.2	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.1	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.0	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.9	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.8	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.7	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.6	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.5	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.4	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.3	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.2	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.1	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.0	0.99768E+00	0.99733E+00	0.99682E+00	0.99583E+00	0.99480E+00	0.99339E+00	0.99040E+00	0.98757E+00	0.98331E+00	0.97934E+00
.9	0.95433E+00	0.95370E+00	0.95289E+00	0.95161E+00	0.95029E+00	0.94860E+00	0.94540E+00	0.94238E+00	0.93802E+00	0.93399E+00
.8	0.79376E+00	0.79205E+00	0.79016E+00	0.78783E+00	0.78542E+00	0.78268E+00	0.77872E+00	0.77497E+00	0.77026E+00	0.76601E+00
.7	0.66212E+00	0.65954E+00	0.65676E+00	0.65357E+00	0.65026E+00	0.64666E+00	0.64207E+00	0.63773E+00	0.63274E+00	0.62829E+00
.6	0.55428E+00	0.55098E+00	0.54747E+00	0.54357E+00	0.53953E+00	0.53522E+00	0.53012E+00	0.52530E+00	0.52007E+00	0.51547E+00
.5	0.46598E+00	0.46210E+00	0.45799E+00	0.45351E+00	0.44887E+00	0.44399E+00	0.43846E+00	0.43325E+00	0.42783E+00	0.42310E+00
.4	0.39372E+00	0.38936E+00	0.38477E+00	0.37981E+00	0.37468E+00	0.36932E+00	0.36345E+00	0.35791E+00	0.35233E+00	0.34751E+00
.3	0.33461E+00	0.32985E+00	0.32486E+00	0.31952E+00	0.31399E+00	0.30824E+00	0.30209E+00	0.29629E+00	0.29058E+00	0.28567E+00
.2	0.28627E+00	0.28119E+00	0.27587E+00	0.27021E+00	0.26435E+00	0.25829E+00	0.25191E+00	0.24589E+00	0.24007E+00	0.23509E+00
.1	0.24675E+00	0.24140E+00	0.23582E+00	0.22990E+00	0.22377E+00	0.21745E+00	0.21088E+00	0.20468E+00	0.19878E+00	0.19374E+00
.0	0.21444E+00	0.20888E+00	0.20308E+00	0.19695E+00	0.19060E+00	0.18407E+00	0.17734E+00	0.17100E+00	0.16503E+00	0.15994E+00
.9	0.18803E+00	0.18230E+00	0.17632E+00	0.17001E+00	0.16349E+00	0.15679E+00	0.14993E+00	0.14347E+00	0.13744E+00	0.13232E+00
.8	0.16646E+00	0.16058E+00	0.15445E+00	0.14801E+00	0.14133E+00	0.13449E+00	0.12753E+00	0.12097E+00	0.11490E+00	0.10975E+00
.7	0.14883E+00	0.14283E+00	0.13659E+00	0.13002E+00	0.12323E+00	0.11627E+00	0.10923E+00	0.10259E+00	0.96479E-01	0.91303E-01
.6	0.13442E+00	0.12833E+00	0.12199E+00	0.11533E+00	0.10844E+00	0.10139E+00	0.94280E-01	0.87576E-01	0.81431E-01	0.76234E-01
.5	0.12266E+00	0.11648E+00	0.11006E+00	0.10333E+00	0.96358E-01	0.89230E-01	0.82065E-01	0.75308E-01	0.69137E-01	0.63924E-01
.4	0.11304E+00	0.10681E+00	0.10032E+00	0.93526E-01	0.86489E-01	0.79298E-01	0.72087E-01	0.65286E-01	0.59094E-01	0.53868E-01
.3	0.10519E+00	0.98904E-01	0.92366E-01	0.85518E-01	0.78427E-01	0.71185E-01	0.63936E-01	0.57100E-01	0.50891E-01	0.45653E-01
.2	0.98777E-01	0.92448E-01	0.85867E-01	0.78976E-01	0.71841E-01	0.64558E-01	0.57279E-01	0.50414E-01	0.44191E-01	0.38944E-01
.1	0.93539E-01	0.87175E-01	0.80558E-01	0.73633E-01	0.66463E-01	0.59145E-01	0.51841E-01	0.44952E-01	0.38718E-01	0.33463E-01
.0	0.89260E-01	0.82868E-01	0.76222E-01	0.69269E-01	0.62070E-01	0.54724E-01	0.47399E-01	0.40492E-01	0.34248E-01	0.28987E-01
.9	0.85766E-01	0.79350E-01	0.72681E-01	0.65705E-01	0.58482E-01	0.51113E-01	0.43772E-01	0.36849E-01	0.30597E-01	0.25331E-01
.8	0.82912E-01	0.76477E-01	0.69789E-01	0.62794E-01	0.55551E-01	0.48164E-01	0.40809E-01	0.33873E-01	0.27615E-01	0.22346E-01
.7	0.80581E-01	0.74130E-01	0.67426E-01	0.60416E-01	0.53158E-01	0.45755E-01	0.38389E-01	0.31443E-01	0.25180E-01	0.19907E-01
.6	0.78677E-01	0.72214E-01	0.65497E-01	0.58474E-01	0.51203E-01	0.43788E-01	0.36413E-01	0.29458E-01	0.23191E-01	0.17916E-01
.5	0.77123E-01	0.70649E-01	0.63922E-01	0.56889E-01	0.49607E-01	0.42182E-01	0.34799E-01	0.27837E-01	0.21567E-01	0.16289E-01
.4	0.75853E-01	0.69371E-01	0.62635E-01	0.55594E-01	0.48303E-01	0.40870E-01	0.33481E-01	0.26513E-01	0.20241E-01	0.14961E-01

3	0.74816E-01	0.68327E-01	0.61584E-01	0.54536E-01	0.47239E-01	0.39798E-01	0.32405E-01	0.25432E-01	0.19157E-01	0.13876E-01
2	0.73969E-01	0.67474E-01	0.60726E-01	0.53672E-01	0.46369E-01	0.38923E-01	0.31526E-01	0.24549E-01	0.18272E-01	0.12990E-01
1	0.73277E-01	0.66778E-01	0.60025E-01	0.52967E-01	0.45659E-01	0.38208E-01	0.30808E-01	0.23828E-01	0.17550E-01	0.12266E-01
=	11	12	13	14	15	16	17	18	19	20
-1 =	0.1639E+01	0.1486E+01	0.1379E+01	0.1309E+01	0.1264E+01	0.1234E+01	0.1213E+01	0.1197E+01	0.1182E+01	0.1169E+01
49	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
48	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
47	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
46	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
45	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
44	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
43	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
42	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
41	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
40	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
39	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
38	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
37	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
36	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
35	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
34	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
33	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95154E+00	0.94882E+00	0.94653E+00	0.94440E+00	0.94374E+00
32	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.95362E+00	0.95048E+00	0.94799E+00	0.94580E+00	0.94374E+00
31	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.89278E+00	0.89310E+00	0.89333E+00	0.89352E+00	0.89367E+00
30	0.97619E+00	0.97385E+00	0.97223E+00	0.96493E+00	0.95810E+00	0.85319E+00	0.85397E+00	0.85458E+00	0.85511E+00	0.85562E+00
29	0.93080E+00	0.92842E+00	0.92677E+00	0.91975E+00	0.91320E+00	0.81579E+00	0.81675E+00	0.81752E+00	0.81820E+00	0.81885E+00
28	0.76263E+00	0.76013E+00	0.75839E+00	0.75240E+00	0.74687E+00	0.78213E+00	0.78314E+00	0.78396E+00	0.78469E+00	0.78538E+00
27	0.62477E+00	0.62217E+00	0.62036E+00	0.61520E+00	0.61052E+00	0.75221E+00	0.75322E+00	0.75404E+00	0.75476E+00	0.75546E+00
26	0.51184E+00	0.50914E+00	0.50727E+00	0.50280E+00	0.49881E+00	0.72549E+00	0.72647E+00	0.72726E+00	0.72797E+00	0.72865E+00
25	0.41937E+00	0.41661E+00	0.41469E+00	0.41078E+00	0.40735E+00	0.70127E+00	0.70222E+00	0.70298E+00	0.70367E+00	0.70433E+00
24	0.34369E+00	0.34087E+00	0.33892E+00	0.33547E+00	0.33251E+00	0.67892E+00	0.67983E+00	0.68057E+00	0.68123E+00	0.68186E+00
23	0.28179E+00	0.27892E+00	0.27693E+00	0.27386E+00	0.27128E+00	0.65790E+00	0.65878E+00	0.65949E+00	0.66013E+00	0.66075E+00
22	0.23116E+00	0.22826E+00	0.22624E+00	0.22347E+00	0.22120E+00	0.63781E+00	0.63866E+00	0.63935E+00	0.63997E+00	0.64056E+00
21	0.18977E+00	0.18683E+00	0.18480E+00	0.18228E+00	0.18026E+00	0.61831E+00	0.61914E+00	0.61980E+00	0.62040E+00	0.62098E+00
20	0.15593E+00	0.15297E+00	0.15092E+00	0.14861E+00	0.14680E+00	0.59915E+00	0.59995E+00	0.60060E+00	0.60119E+00	0.60175E+00
19	0.12828E+00	0.12530E+00	0.12323E+00	0.12109E+00	0.11945E+00	0.58011E+00	0.58089E+00	0.58153E+00	0.58210E+00	0.58264E+00
18	0.10568E+00	0.10268E+00	0.10060E+00	0.98596E-01	0.97098E-01	0.56098E+00	0.56175E+00	0.56236E+00	0.56292E+00	0.56345E+00
17	0.87221E-01	0.84207E-01	0.82116E-01	0.80221E-01	0.78837E-01	0.54153E+00	0.54228E+00	0.54289E+00	0.54343E+00	0.54395E+00
16	0.72137E-01	0.69111E-01	0.67012E-01	0.65209E-01	0.63917E-01	0.52148E+00	0.52221E+00	0.52281E+00	0.52334E+00	0.52386E+00
15	0.59813E-01	0.56778E-01	0.54673E-01	0.52945E-01	0.51728E-01	0.50042E+00	0.50114E+00	0.50173E+00	0.50226E+00	0.50277E+00
14	0.49747E-01	0.46704E-01	0.44593E-01	0.42926E-01	0.41771E-01	0.47780E+00	0.47852E+00	0.47911E+00	0.47963E+00	0.48014E+00
13	0.41524E-01	0.38475E-01	0.36360E-01	0.34743E-01	0.33638E-01	0.45283E+00	0.45356E+00	0.45414E+00	0.45467E+00	0.45517E+00
12	0.34807E-01	0.31753E-01	0.29635E-01	0.28058E-01	0.26995E-01	0.42443E+00	0.42516E+00	0.42576E+00	0.42629E+00	0.42680E+00
11	0.29321E-01	0.26263E-01	0.24142E-01	0.22599E-01	0.21569E-01	0.39124E+00	0.39199E+00	0.39260E+00	0.39314E+00	0.39366E+00
10	0.24840E-01	0.21779E-01	0.19655E-01	0.18139E-01	0.17137E-01	0.35199E+00	0.35276E+00	0.35338E+00	0.35393E+00	0.35446E+00
9	0.21181E-01	0.18116E-01	0.15991E-01	0.14497E-01	0.13517E-01	0.30628E+00	0.30705E+00	0.30766E+00	0.30821E+00	0.30874E+00
8	0.18192E-01	0.15125E-01	0.12998E-01	0.11523E-01	0.10561E-01	0.25568E+00	0.25640E+00	0.25698E+00	0.25750E+00	0.25800E+00
7	0.15751E-01	0.12682E-01	0.10554E-01	0.90931E-02	0.81467E-02	0.20387E+00	0.20450E+00	0.20500E+00	0.20545E+00	0.20589E+00
6	0.13757E-01	0.10687E-01	0.85577E-02	0.71090E-02	0.61748E-02	0.15502E+00	0.15552E+00	0.15593E+00	0.15629E+00	0.15664E+00
5	0.12129E-01	0.90575E-02	0.69274E-02	0.54886E-02	0.45644E-02	0.11189E+00	0.11227E+00	0.11257E+00	0.11284E+00	0.11310E+00
4	0.10799E-01	0.77267E-02	0.55959E-02	0.41652E-02	0.32491E-02	0.75374E-01	0.75630E-01	0.75836E-01	0.76020E-01	0.76196E-01
3	0.97130E-02	0.66399E-02	0.45086E-02	0.30844E-02	0.21750E-02	0.45120E-01	0.45273E-01	0.45397E-01	0.45507E-01	0.45613E-01

1	0.00000E+00										
=	31	32	33	34	35	36	37	38	39	40	
-1 =	0.9603E+00	0.9228E+00	0.8817E+00	0.8377E+00	0.7918E+00	0.7447E+00	0.6969E+00	0.6490E+00	0.6012E+00	0.5540E+00	
49	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
48	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
47	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
46	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
45	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
44	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
43	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
42	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
41	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
40	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
39	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
38	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
37	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
36	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
35	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
34	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
33	0.94118E+00	0.96745E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
32	0.93927E+00	0.96608E+00	0.99419E+00	0.10164E+01	0.10357E+01	0.10533E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
31	0.91897E+00	0.94800E+00	0.97877E+00	0.10060E+01	0.10303E+01	0.10513E+01	0.10698E+01	0.10856E+01	0.11010E+01	0.11163E+01	
30	0.88437E+00	0.91101E+00	0.94024E+00	0.96796E+00	0.99503E+00	0.10219E+01	0.10485E+01	0.10739E+01	0.10970E+01	0.11163E+01	
29	0.84687E+00	0.86973E+00	0.89522E+00	0.92014E+00	0.94540E+00	0.97164E+00	0.99920E+00	0.10281E+01	0.10582E+01	0.10886E+01	
28	0.81118E+00	0.83026E+00	0.85172E+00	0.87303E+00	0.89500E+00	0.91829E+00	0.94335E+00	0.97049E+00	0.10001E+01	0.10321E+01	
27	0.77876E+00	0.79462E+00	0.81250E+00	0.83041E+00	0.84901E+00	0.86889E+00	0.89049E+00	0.91421E+00	0.94052E+00	0.96975E+00	
26	0.74968E+00	0.76297E+00	0.77795E+00	0.79300E+00	0.80868E+00	0.82546E+00	0.84375E+00	0.86391E+00	0.88641E+00	0.91164E+00	
25	0.72346E+00	0.73476E+00	0.74750E+00	0.76030E+00	0.77362E+00	0.78786E+00	0.80335E+00	0.82040E+00	0.83941E+00	0.86077E+00	
24	0.69946E+00	0.70929E+00	0.72031E+00	0.73140E+00	0.74290E+00	0.75515E+00	0.76842E+00	0.78295E+00	0.79910E+00	0.81716E+00	
23	0.67713E+00	0.68584E+00	0.69559E+00	0.70538E+00	0.71550E+00	0.72623E+00	0.73779E+00	0.75038E+00	0.76427E+00	0.77973E+00	
22	0.65598E+00	0.66385E+00	0.67264E+00	0.68145E+00	0.69053E+00	0.70012E+00	0.71038E+00	0.72149E+00	0.73366E+00	0.74711E+00	
21	0.63562E+00	0.64285E+00	0.65091E+00	0.65897E+00	0.66727E+00	0.67598E+00	0.68526E+00	0.69525E+00	0.70613E+00	0.71805E+00	
20	0.61574E+00	0.62247E+00	0.62996E+00	0.63745E+00	0.64513E+00	0.65317E+00	0.66170E+00	0.67084E+00	0.68073E+00	0.69149E+00	
19	0.59609E+00	0.60241E+00	0.60945E+00	0.61647E+00	0.62366E+00	0.63117E+00	0.63912E+00	0.64759E+00	0.65672E+00	0.66661E+00	
18	0.57642E+00	0.58241E+00	0.58905E+00	0.59569E+00	0.60248E+00	0.60957E+00	0.61704E+00	0.62499E+00	0.63352E+00	0.64272E+00	
17	0.55649E+00	0.56218E+00	0.56849E+00	0.57480E+00	0.58125E+00	0.58796E+00	0.59504E+00	0.60255E+00	0.61060E+00	0.61924E+00	
16	0.53601E+00	0.54142E+00	0.54742E+00	0.55342E+00	0.55956E+00	0.56596E+00	0.57269E+00	0.57983E+00	0.58746E+00	0.59563E+00	
15	0.51458E+00	0.51971E+00	0.52541E+00	0.53112E+00	0.53697E+00	0.54307E+00	0.54949E+00	0.55629E+00	0.56355E+00	0.57132E+00	
14	0.49163E+00	0.49649E+00	0.50188E+00	0.50730E+00	0.51287E+00	0.51868E+00	0.52479E+00	0.53127E+00	0.53818E+00	0.54558E+00	
13	0.46640E+00	0.47095E+00	0.47601E+00	0.48113E+00	0.48640E+00	0.49191E+00	0.49772E+00	0.50388E+00	0.51046E+00	0.51750E+00	
12	0.43778E+00	0.44199E+00	0.44668E+00	0.45146E+00	0.45640E+00	0.46160E+00	0.46708E+00	0.47291E+00	0.47915E+00	0.48582E+00	
11	0.40440E+00	0.40822E+00	0.41248E+00	0.41687E+00	0.42145E+00	0.42628E+00	0.43141E+00	0.43687E+00	0.44273E+00	0.44900E+00	
10	0.36489E+00	0.36825E+00	0.37201E+00	0.37594E+00	0.38009E+00	0.38451E+00	0.38921E+00	0.39425E+00	0.39966E+00	0.40547E+00	
9	0.31865E+00	0.32148E+00	0.32468E+00	0.32809E+00	0.33174E+00	0.33565E+00	0.33985E+00	0.34436E+00	0.34923E+00	0.35447E+00	
8	0.26699E+00	0.26928E+00	0.27189E+00	0.27472E+00	0.27780E+00	0.28113E+00	0.28472E+00	0.28861E+00	0.29282E+00	0.29737E+00	
7	0.21354E+00	0.21532E+00	0.21735E+00	0.21960E+00	0.22208E+00	0.22477E+00	0.22771E+00	0.23089E+00	0.23434E+00	0.23808E+00	
6	0.16270E+00	0.16403E+00	0.16555E+00	0.16726E+00	0.16915E+00	0.17123E+00	0.17349E+00	0.17595E+00	0.17862E+00	0.18153E+00	
5	0.11757E+00	0.11851E+00	0.11961E+00	0.12084E+00	0.12221E+00	0.12371E+00	0.12536E+00	0.12715E+00	0.12910E+00	0.13122E+00	
4	0.79235E-01	0.79870E-01	0.80603E-01	0.81433E-01	0.82356E-01	0.83372E-01	0.84483E-01	0.85694E-01	0.87013E-01	0.88447E-01	
3	0.47438E-01	0.47818E-01	0.48256E-01	0.48752E-01	0.49305E-01	0.49914E-01	0.50580E-01	0.51306E-01	0.52096E-01	0.52956E-01	
2	0.21344E-01	0.21514E-01	0.21711E-01	0.21935E-01	0.22183E-01	0.22457E-01	0.22757E-01	0.23083E-01	0.23439E-01	0.23826E-01	
1	0.00000E+00										

=	41	42	43	44	45	46	47	48	49	50
1 =	0.5077E+00	0.4632E+00	0.4212E+00	0.3824E+00	0.3475E+00	0.3165E+00	0.2894E+00	0.2655E+00	0.2441E+00	0.2245E+00
9	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
8	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
7	-0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
6	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
5	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
4	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
2	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
1	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
0	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
9	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
7	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
6	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
5	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
4	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
2	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
1	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
0	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
9	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
7	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
6	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
5	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
4	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
2	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
1	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
0	0.11313E+01	0.11460E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
9	0.1178E+01	0.11425E+01	0.11600E+01	0.11730E+01	0.11847E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
3	0.10661E+01	0.11010E+01	0.11343E+01	0.11631E+01	0.11831E+01	0.11949E+01	0.12037E+01	0.12111E+01	0.12175E+01	0.12230E+01
7	0.10020E+01	0.10370E+01	0.10736E+01	0.11102E+01	0.11447E+01	0.11743E+01	0.11967E+01	0.12099E+01	0.12175E+01	0.12230E+01
5	0.93991E+00	0.97120E+00	0.10051E+01	0.10408E+01	0.10769E+01	0.11119E+01	0.11443E+01	0.11731E+01	0.11974E+01	0.12161E+01
3	0.88478E+00	0.91157E+00	0.94097E+00	0.97253E+00	0.10054E+01	0.10386E+01	0.10712E+01	0.11027E+01	0.11329E+01	0.11618E+01
4	0.83743E+00	0.86003E+00	0.88489E+00	0.91175E+00	0.94003E+00	0.96904E+00	0.99821E+00	0.10273E+01	0.10564E+01	0.10859E+01
3	0.79696E+00	0.81608E+00	0.83704E+00	0.85964E+00	0.88347E+00	0.90802E+00	0.93291E+00	0.95800E+00	0.98357E+00	0.10101E+01
2	0.76199E+00	0.77837E+00	0.79621E+00	0.81533E+00	0.83539E+00	0.85602E+00	0.87692E+00	0.89805E+00	0.91969E+00	0.94236E+00
1	0.73114E+00	0.74543E+00	0.76086E+00	0.77726E+00	0.79434E+00	0.81179E+00	0.82939E+00	0.84712E+00	0.86526E+00	0.88427E+00
3	0.70323E+00	0.71594E+00	0.72955E+00	0.74388E+00	0.75868E+00	0.77366E+00	0.78867E+00	0.80369E+00	0.81898E+00	0.83493E+00
9	0.67732E+00	0.68883E+00	0.70105E+00	0.71382E+00	0.72689E+00	0.74001E+00	0.75304E+00	0.76598E+00	0.77905E+00	0.79261E+00
8	0.65263E+00	0.66322E+00	0.67439E+00	0.68598E+00	0.69774E+00	0.70945E+00	0.72099E+00	0.73236E+00	0.74375E+00	0.75547E+00
7	0.62851E+00	0.63838E+00	0.64874E+00	0.65941E+00	0.67018E+00	0.68082E+00	0.69123E+00	0.70141E+00	0.71154E+00	0.72189E+00
5	0.60438E+00	0.61367E+00	0.62337E+00	0.63332E+00	0.64331E+00	0.65313E+00	0.66268E+00	0.67196E+00	0.68114E+00	0.69045E+00
5	0.57962E+00	0.58840E+00	0.59756E+00	0.60692E+00	0.61629E+00	0.62546E+00	0.63433E+00	0.64292E+00	0.65136E+00	0.65989E+00
4	0.55348E+00	0.56182E+00	0.57050E+00	0.57937E+00	0.58820E+00	0.59684E+00	0.60517E+00	0.61320E+00	0.62107E+00	0.62899E+00
3	0.52501E+00	0.53294E+00	0.54119E+00	0.54960E+00	0.55798E+00	0.56615E+00	0.57402E+00	0.58159E+00	0.58900E+00	0.59643E+00
2	0.49294E+00	0.50047E+00	0.50829E+00	0.51627E+00	0.52422E+00	0.53197E+00	0.53943E+00	0.54661E+00	0.55362E+00	0.56065E+00
1	0.45570E+00	0.46280E+00	0.47018E+00	0.47772E+00	0.48523E+00	0.49257E+00	0.49963E+00	0.50644E+00	0.51309E+00	0.51975E+00
3	0.41169E+00	0.41829E+00	0.42517E+00	0.43221E+00	0.43924E+00	0.44612E+00	0.45276E+00	0.45916E+00	0.46543E+00	0.47172E+00
9	0.36010E+00	0.36609E+00	0.37235E+00	0.37878E+00	0.38521E+00	0.39152E+00	0.39764E+00	0.40355E+00	0.40936E+00	0.41520E+00
3	0.30226E+00	0.30748E+00	0.31296E+00	0.31860E+00	0.32426E+00	0.32984E+00	0.33526E+00	0.34052E+00	0.34570E+00	0.35094E+00
7	0.24212E+00	0.24643E+00	0.25098E+00	0.25566E+00	0.26039E+00	0.26505E+00	0.26960E+00	0.27403E+00	0.27840E+00	0.28284E+00
5	0.18466E+00	0.18803E+00	0.19157E+00	0.19523E+00	0.19893E+00	0.20259E+00	0.20617E+00	0.20966E+00	0.21312E+00	0.21663E+00
5	0.13351E+00	0.13597E+00	0.13856E+00	0.14124E+00	0.14396E+00	0.14664E+00	0.14927E+00	0.15184E+00	0.15439E+00	0.15698E+00
4	0.89999E-01	0.91663E-01	0.93420E-01	0.95238E-01	0.97078E-01	0.98902E-01	0.10069E+00	0.10243E+00	0.10416E+00	0.10592E+00
3	0.53887E-01	0.54884E-01	0.55938E-01	0.57029E-01	0.58133E-01	0.59227E-01	0.60298E-01	0.61345E-01	0.62385E-01	0.63442E-01
2	0.24245E-01	0.24694E-01	0.25168E-01	0.25659E-01	0.26156E-01	0.26648E-01	0.27130E-01	0.27601E-01	0.28069E-01	0.28545E-01
1	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

=	51	. 52	53	54	55	56	57	58	59	60
-1 =	0.2059E+00	0.1878E+00	0.1701E+00	0.1525E+00	0.1350E+00	0.1175E+00	0.1000E+00	0.8250E-01	0.6500E-01	0.6500E-01
49	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
48	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
47	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
46	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
45	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
44	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
43	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
42	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
41	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
40	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
39	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
38	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
37	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
36	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
35	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
34	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
33	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
32	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
31	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
30	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
29	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
28	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
27	0.12277E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
26	0.12267E+01	0.12318E+01	0.12352E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
25	0.11890E+01	0.12130E+01	0.12308E+01	0.12376E+01	0.12388E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
24	0.11163E+01	0.11476E+01	0.11793E+01	0.12091E+01	0.12320E+01	0.12383E+01	0.12358E+01	0.00000E+00	0.00000E+00	0.00000E+00
23	0.10383E+01	0.10689E+01	0.11022E+01	0.11383E+01	0.11759E+01	0.12113E+01	0.12335E+01	0.00000E+00	0.00000E+00	0.00000E+00
22	0.96676E+00	0.99368E+00	0.10240E+01	0.10583E+01	0.10972E+01	0.11405E+01	0.11857E+01	0.00000E+00	0.00000E+00	0.00000E+00
21	0.90479E+00	0.92758E+00	0.95349E+00	0.98346E+00	0.10185E+01	0.10599E+01	0.11085E+01	0.00000E+00	0.00000E+00	0.00000E+00
20	0.85211E+00	0.87118E+00	0.89289E+00	0.91814E+00	0.94805E+00	0.98419E+00	0.10286E+01	0.00000E+00	0.00000E+00	0.00000E+00
19	0.80712E+00	0.82314E+00	0.84131E+00	0.86240E+00	0.88742E+00	0.91786E+00	0.95595E+00	0.00000E+00	0.00000E+00	0.00000E+00
18	0.76793E+00	0.78159E+00	0.79697E+00	0.81470E+00	0.83563E+00	0.86104E+00	0.89292E+00	0.00000E+00	0.00000E+00	0.00000E+00
17	0.73280E+00	0.74467E+00	0.75792E+00	0.77306E+00	0.79079E+00	0.81213E+00	0.83876E+00	0.00000E+00	0.00000E+00	0.00000E+00
16	0.70020E+00	0.71072E+00	0.72237E+00	0.73557E+00	0.75086E+00	0.76907E+00	0.79157E+00	0.00000E+00	0.00000E+00	0.00000E+00
15	0.66876E+00	0.67828E+00	0.68873E+00	0.70048E+00	0.71395E+00	0.72982E+00	0.74918E+00	0.00000E+00	0.00000E+00	0.00000E+00
14	0.63720E+00	0.64594E+00	0.65551E+00	0.66617E+00	0.67829E+00	0.69244E+00	0.70947E+00	0.00000E+00	0.00000E+00	0.00000E+00
13	0.60411E+00	0.61227E+00	0.62115E+00	0.63100E+00	0.64213E+00	0.65500E+00	0.67034E+00	0.00000E+00	0.00000E+00	0.00000E+00
12	0.56790E+00	0.57558E+00	0.58393E+00	0.59316E+00	0.60355E+00	0.61549E+00	0.62961E+00	0.00000E+00	0.00000E+00	0.00000E+00
11	0.52662E+00	0.53391E+00	0.54182E+00	0.55056E+00	0.56037E+00	0.57162E+00	0.58485E+00	0.00000E+00	0.00000E+00	0.00000E+00
10	0.47822E+00	0.48513E+00	0.49263E+00	0.50092E+00	0.51024E+00	0.52092E+00	0.53346E+00	0.00000E+00	0.00000E+00	0.00000E+00
9	0.42125E+00	0.42770E+00	0.43472E+00	0.44251E+00	0.45129E+00	0.46138E+00	0.47324E+00	0.00000E+00	0.00000E+00	0.00000E+00
8	0.35638E+00	0.36220E+00	0.36856E+00	0.37564E+00	0.38366E+00	0.39291E+00	0.40384E+00	0.00000E+00	0.00000E+00	0.00000E+00
7	0.28746E+00	0.29243E+00	0.29787E+00	0.30395E+00	0.31088E+00	0.31891E+00	0.32844E+00	0.00000E+00	0.00000E+00	0.00000E+00
6	0.22031E+00	0.22425E+00	0.22860E+00	0.23347E+00	0.23903E+00	0.24551E+00	0.25323E+00	0.00000E+00	0.00000E+00	0.00000E+00
5	0.15969E+00	0.16261E+00	0.16583E+00	0.16944E+00	0.17358E+00	0.17841E+00	0.18418E+00	0.00000E+00	0.00000E+00	0.00000E+00
4	0.10777E+00	0.10976E+00	0.11195E+00	0.11441E+00	0.11723E+00	0.12053E+00	0.12447E+00	0.00000E+00	0.00000E+00	0.00000E+00
3	0.64549E-01	0.65743E-01	0.67059E-01	0.68539E-01	0.70234E-01	0.72214E-01	0.74584E-01	0.00000E+00	0.00000E+00	0.00000E+00
2	0.29043E-01	0.29580E-01	0.30172E-01	0.30838E-01	0.31601E-01	0.32491E-01	0.33557E-01	0.00000E+00	0.00000E+00	0.00000E+00
1	0.00000E+00									

=	61	62	63	64	65	66	67	68	69	70
1 =	0.8250E-01	0.1000E+00	0.1175E+00	0.1350E+00	0.1525E+00	0.1701E+00	0.1878E+00	0.2059E+00	0.2245E+00	0.2441E+00
9	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
8	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
7	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
6	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
5	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
4	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
3	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
2	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
1	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
0	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
9	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
8	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
7	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
6	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
5	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
4	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
3	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
2	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
1	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
0	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
9	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
8	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
7	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12277E+01	0.12230E+01	0.12175E+01
6	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12352E+01	0.12318E+01	0.12267E+01	0.12161E+01	0.11974E+01
5	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12376E+01	0.12308E+01	0.12130E+01	0.11890E+01	0.11618E+01	0.11329E+01
4	0.00000E+00	0.12358E+01	0.12383E+01	0.12388E+01	0.12320E+01	0.12091E+01	0.11793E+01	0.11476E+01	0.11163E+01	0.10859E+01
3	0.00000E+00	0.12335E+01	0.12113E+01	0.11759E+01	0.11383E+01	0.11022E+01	0.10689E+01	0.10383E+01	0.10101E+01	0.98357E+00
2	0.00000E+00	0.11857E+01	0.11405E+01	0.10972E+01	0.10583E+01	0.10240E+01	0.99368E+00	0.96676E+00	0.94236E+00	0.91969E+00
1	0.00000E+00	0.11085E+01	0.10599E+01	0.10185E+01	0.98346E+00	0.95349E+00	0.92758E+00	0.90479E+00	0.88427E+00	0.86526E+00
0	0.00000E+00	0.10286E+01	0.98419E+00	0.94805E+00	0.91814E+00	0.89289E+00	0.87118E+00	0.85211E+00	0.83493E+00	0.81898E+00
9	0.00000E+00	0.95595E+00	0.91786E+00	0.88742E+00	0.86240E+00	0.84131E+00	0.82314E+00	0.80712E+00	0.79261E+00	0.77905E+00
8	0.00000E+00	0.89292E+00	0.86104E+00	0.83563E+00	0.81470E+00	0.79697E+00	0.78159E+00	0.76793E+00	0.75547E+00	0.74375E+00
7	0.00000E+00	0.83876E+00	0.81213E+00	0.79079E+00	0.77306E+00	0.75792E+00	0.74467E+00	0.73280E+00	0.72189E+00	0.71154E+00
6	0.00000E+00	0.79157E+00	0.76907E+00	0.75086E+00	0.73557E+00	0.72237E+00	0.71072E+00	0.70020E+00	0.69045E+00	0.68114E+00
5	0.00000E+00	0.74918E+00	0.72982E+00	0.71395E+00	0.70048E+00	0.68873E+00	0.67828E+00	0.66876E+00	0.65989E+00	0.65136E+00
4	0.00000E+00	0.70947E+00	0.69244E+00	0.67829E+00	0.66617E+00	0.65551E+00	0.64594E+00	0.63720E+00	0.62899E+00	0.62107E+00
3	0.00000E+00	0.67034E+00	0.65500E+00	0.64213E+00	0.63100E+00	0.62115E+00	0.61227E+00	0.60411E+00	0.59643E+00	0.58900E+00
2	0.00000E+00	0.62961E+00	0.61549E+00	0.60355E+00	0.59316E+00	0.58393E+00	0.57558E+00	0.56790E+00	0.56065E+00	0.55362E+00
1	0.00000E+00	0.58485E+00	0.57162E+00	0.56037E+00	0.55056E+00	0.54182E+00	0.53391E+00	0.52662E+00	0.51975E+00	0.51309E+00
0	0.00000E+00	0.53346E+00	0.52092E+00	0.51024E+00	0.50092E+00	0.49263E+00	0.48513E+00	0.47822E+00	0.47172E+00	0.46543E+00
9	0.00000E+00	0.47324E+00	0.46138E+00	0.45129E+00	0.44251E+00	0.43472E+00	0.42770E+00	0.42125E+00	0.41520E+00	0.40936E+00
8	0.00000E+00	0.40384E+00	0.39291E+00	0.38366E+00	0.37564E+00	0.36856E+00	0.36220E+00	0.35638E+00	0.35094E+00	0.34570E+00
7	0.00000E+00	0.32844E+00	0.31891E+00	0.31088E+00	0.30395E+00	0.29787E+00	0.29243E+00	0.28746E+00	0.28284E+00	0.27840E+00
6	0.00000E+00	0.25323E+00	0.24551E+00	0.23903E+00	0.23347E+00	0.22860E+00	0.22425E+00	0.22031E+00	0.21663E+00	0.21312E+00
5	0.00000E+00	0.18418E+00	0.17841E+00	0.17358E+00	0.16944E+00	0.16583E+00	0.16261E+00	0.15969E+00	0.15698E+00	0.15439E+00
4	0.00000E+00	0.12447E+00	0.12053E+00	0.11723E+00	0.11441E+00	0.11195E+00	0.10976E+00	0.10777E+00	0.10592E+00	0.10416E+00
3	0.00000E+00	0.74584E-01	0.72214E-01	0.70234E-01	0.68539E-01	0.67059E-01	0.65743E-01	0.64549E-01	0.63442E-01	0.62385E-01
2	0.00000E+00	0.33557E-01	0.32491E-01	0.31601E-01	0.30838E-01	0.30172E-01	0.29580E-01	0.29043E-01	0.28545E-01	0.28069E-01
1	0.00000E+00									

J =	71	72	73	74	75	76	77	78	79	80
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X-1 = 0.2655E+00 0.2894E+00 0.3165E+00 0.3475E+00 0.3824E+00 0.4212E+00 0.4632E+00 0.5077E+00 0.5540E+00 0.6012E+00

49	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
48	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
47	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
46	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
45	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
44	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
43	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
42	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
41	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
40	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
39	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
38	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
37	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
36	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
35	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
34	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
33	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
32	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
31	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11460E+01	0.11313E+01	0.11163E+01	0.11010E+01
30	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11425E+01	0.11178E+01	0.10886E+01	0.10582E+01
29	0.12111E+01	0.12037E+01	0.11949E+01	0.11847E+01	0.11730E+01	0.11600E+01	0.11425E+01	0.11178E+01	0.10886E+01	0.10582E+01
28	0.12111E+01	0.12037E+01	0.11949E+01	0.11831E+01	0.11730E+01	0.11631E+01	0.11343E+01	0.11010E+01	0.10661E+01	0.10321E+01
27	0.12099E+01	0.11967E+01	0.11743E+01	0.11447E+01	0.11102E+01	0.10736E+01	0.10370E+01	0.10020E+01	0.96975E+00	0.94052E+00
26	0.11731E+01	0.11443E+01	0.11119E+01	0.10769E+01	0.10408E+01	0.10051E+01	0.97120E+00	0.93991E+00	0.91164E+00	0.88641E+00
25	0.11027E+01	0.10712E+01	0.10386E+01	0.10054E+01	0.97253E+00	0.94097E+00	0.91157E+00	0.88478E+00	0.86077E+00	0.83941E+00
24	0.10273E+01	0.99821E+00	0.96904E+00	0.94003E+00	0.91175E+00	0.88489E+00	0.86003E+00	0.83743E+00	0.81716E+00	0.79910E+00
23	0.95800E+00	0.93291E+00	0.90802E+00	0.88347E+00	0.85964E+00	0.83704E+00	0.81608E+00	0.79696E+00	0.77973E+00	0.76427E+00
22	0.89805E+00	0.87692E+00	0.85602E+00	0.83539E+00	0.81533E+00	0.79621E+00	0.77837E+00	0.76199E+00	0.74711E+00	0.73366E+00
21	0.84712E+00	0.82939E+00	0.81179E+00	0.79434E+00	0.77726E+00	0.76086E+00	0.74543E+00	0.73114E+00	0.71805E+00	0.70613E+00
20	0.80369E+00	0.78867E+00	0.77366E+00	0.75868E+00	0.74388E+00	0.72955E+00	0.71594E+00	0.70323E+00	0.69149E+00	0.68073E+00
19	0.76598E+00	0.75304E+00	0.74001E+00	0.72689E+00	0.71382E+00	0.70105E+00	0.68883E+00	0.67732E+00	0.66661E+00	0.65672E+00
18	0.73236E+00	0.72099E+00	0.70945E+00	0.69774E+00	0.68598E+00	0.67439E+00	0.66322E+00	0.65263E+00	0.64272E+00	0.63352E+00
17	0.70141E+00	0.69123E+00	0.68082E+00	0.67018E+00	0.65941E+00	0.64874E+00	0.63838E+00	0.62851E+00	0.61924E+00	0.61060E+00
16	0.67196E+00	0.66268E+00	0.65313E+00	0.64331E+00	0.63332E+00	0.62337E+00	0.61367E+00	0.60438E+00	0.59563E+00	0.58746E+00
15	0.64292E+00	0.63433E+00	0.62546E+00	0.61629E+00	0.60692E+00	0.59756E+00	0.58840E+00	0.57962E+00	0.57132E+00	0.56355E+00
14	0.61320E+00	0.60517E+00	0.59684E+00	0.58820E+00	0.57937E+00	0.57050E+00	0.56182E+00	0.55348E+00	0.54558E+00	0.53818E+00
13	0.58159E+00	0.57402E+00	0.56615E+00	0.55798E+00	0.54960E+00	0.54119E+00	0.53294E+00	0.52501E+00	0.51750E+00	0.51046E+00
12	0.54661E+00	0.53943E+00	0.53197E+00	0.52422E+00	0.51627E+00	0.50829E+00	0.50047E+00	0.49294E+00	0.48582E+00	0.47915E+00
11	0.50644E+00	0.49963E+00	0.49257E+00	0.48523E+00	0.47772E+00	0.47018E+00	0.46280E+00	0.45570E+00	0.44900E+00	0.44273E+00
10	0.45916E+00	0.45276E+00	0.44612E+00	0.43924E+00	0.43221E+00	0.42517E+00	0.41829E+00	0.41169E+00	0.40547E+00	0.39966E+00
9	0.40355E+00	0.39764E+00	0.39152E+00	0.38521E+00	0.37878E+00	0.37235E+00	0.36609E+00	0.36010E+00	0.35447E+00	0.34923E+00
8	0.34052E+00	0.33526E+00	0.32984E+00	0.32426E+00	0.31860E+00	0.31296E+00	0.30748E+00	0.30226E+00	0.29737E+00	0.29282E+00
7	0.27403E+00	0.26960E+00	0.26505E+00	0.26039E+00	0.25566E+00	0.25098E+00	0.24643E+00	0.24212E+00	0.23808E+00	0.23434E+00
6	0.20966E+00	0.20617E+00	0.20259E+00	0.19893E+00	0.19523E+00	0.19157E+00	0.18803E+00	0.18466E+00	0.18153E+00	0.17862E+00
5	0.15184E+00	0.14927E+00	0.14664E+00	0.14396E+00	0.14124E+00	0.13856E+00	0.13597E+00	0.13351E+00	0.13122E+00	0.12910E+00
4	0.10243E+00	0.10069E+00	0.98902E-01	0.97078E-01	0.95238E-01	0.93420E-01	0.91663E-01	0.89999E-01	0.88447E-01	0.87013E-01
3	0.61345E-01	0.60298E-01	0.59227E-01	0.58133E-01	0.57029E-01	0.55938E-01	0.54884E-01	0.53887E-01	0.52956E-01	0.52096E-01
2	0.27601E-01	0.27130E-01	0.26648E-01	0.26156E-01	0.25659E-01	0.25168E-01	0.24694E-01	0.24245E-01	0.23826E-01	0.23439E-01
1	0.00000E+00									

	91	92	93	94	95	96	97	98	99	100
$\zeta_1 =$	$0.1046E+01$	$0.1067E+01$	$0.1084E+01$	$0.1100E+01$	$0.1115E+01$	$0.1128E+01$	$0.1142E+01$	$0.1155E+01$	$0.1169E+01$	$0.1182E+01$
$\zeta_{-1} =$	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
49	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
48	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
47	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
46	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
45	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
44	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
43	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
42	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
41	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
40	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
39	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
38	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
37	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
36	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
35	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94580E+00$
34	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94440E+00$
33	$0.93431E+00$	$0.93498E+00$	$0.93556E+00$	$0.93607E+00$	$0.93654E+00$	$0.93765E+00$	$0.93969E+00$	$0.94171E+00$	$0.94374E+00$	$0.94440E+00$
32	$0.92829E+00$	$0.92753E+00$	$0.92677E+00$	$0.92601E+00$	$0.92527E+00$	$0.92514E+00$	$0.92587E+00$	$0.92654E+00$	$0.92716E+00$	$0.92775E+00$
31	$0.90185E+00$	$0.89978E+00$	$0.89798E+00$	$0.89638E+00$	$0.89490E+00$	$0.89402E+00$	$0.89392E+00$	$0.89381E+00$	$0.89367E+00$	$0.89352E+00$
30	$0.86632E+00$	$0.86385E+00$	$0.86175E+00$	$0.85991E+00$	$0.85822E+00$	$0.85708E+00$	$0.85659E+00$	$0.85611E+00$	$0.85562E+00$	$0.85511E+00$
29	$0.83000E+00$	$0.82753E+00$	$0.82545E+00$	$0.82364E+00$	$0.82199E+00$	$0.82079E+00$	$0.82014E+00$	$0.81949E+00$	$0.81885E+00$	$0.81820E+00$
28	$0.79611E+00$	$0.79381E+00$	$0.79186E+00$	$0.79017E+00$	$0.78864E+00$	$0.78748E+00$	$0.78677E+00$	$0.78607E+00$	$0.78538E+00$	$0.78469E+00$
27	$0.76549E+00$	$0.76339E+00$	$0.76161E+00$	$0.76007E+00$	$0.75867E+00$	$0.75758E+00$	$0.75686E+00$	$0.75616E+00$	$0.75546E+00$	$0.75476E+00$
26	$0.73977E+00$	$0.73604E+00$	$0.73443E+00$	$0.73302E+00$	$0.73174E+00$	$0.73073E+00$	$0.73002E+00$	$0.72933E+00$	$0.72865E+00$	$0.72797E+00$
25	$0.71300E+00$	$0.71123E+00$	$0.70975E+00$	$0.70845E+00$	$0.70728E+00$	$0.70634E+00$	$0.70565E+00$	$0.70498E+00$	$0.70433E+00$	$0.70367E+00$
24	$0.68999E+00$	$0.68836E+00$	$0.68698E+00$	$0.68578E+00$	$0.68469E+00$	$0.68380E+00$	$0.68314E+00$	$0.68250E+00$	$0.68186E+00$	$0.68123E+00$
23	$0.66843E+00$	$0.66690E+00$	$0.66561E+00$	$0.66448E+00$	$0.66346E+00$	$0.66262E+00$	$0.66198E+00$	$0.66136E+00$	$0.66075E+00$	$0.66013E+00$
22	$0.64788E+00$	$0.64643E+00$	$0.64521E+00$	$0.64414E+00$	$0.64318E+00$	$0.64238E+00$	$0.64176E+00$	$0.64115E+00$	$0.64056E+00$	$0.63997E+00$
21	$0.62799E+00$	$0.62661E+00$	$0.62545E+00$	$0.62443E+00$	$0.62351E+00$	$0.62274E+00$	$0.62214E+00$	$0.62156E+00$	$0.62098E+00$	$0.62040E+00$
20	$0.60850E+00$	$0.60718E+00$	$0.60606E+00$	$0.60509E+00$	$0.60420E+00$	$0.60346E+00$	$0.60288E+00$	$0.60231E+00$	$0.60175E+00$	$0.60119E+00$
19	$0.58917E+00$	$0.58789E+00$	$0.58682E+00$	$0.58588E+00$	$0.58503E+00$	$0.58431E+00$	$0.58374E+00$	$0.58319E+00$	$0.58264E+00$	$0.58210E+00$
18	$0.56978E+00$	$0.56855E+00$	$0.56751E+00$	$0.56661E+00$	$0.56578E+00$	$0.56509E+00$	$0.56453E+00$	$0.56399E+00$	$0.56345E+00$	$0.56292E+00$
17	$0.55010E+00$	$0.54891E+00$	$0.54790E+00$	$0.54703E+00$	$0.54623E+00$	$0.54555E+00$	$0.54501E+00$	$0.54448E+00$	$0.54395E+00$	$0.54343E+00$
16	$0.52984E+00$	$0.52869E+00$	$0.52771E+00$	$0.52686E+00$	$0.52608E+00$	$0.52542E+00$	$0.52489E+00$	$0.52437E+00$	$0.52386E+00$	$0.52334E+00$
15	$0.50862E+00$	$0.50749E+00$	$0.50654E+00$	$0.50571E+00$	$0.50496E+00$	$0.50432E+00$	$0.50379E+00$	$0.50327E+00$	$0.50277E+00$	$0.50226E+00$
14	$0.48587E+00$	$0.48478E+00$	$0.48385E+00$	$0.48304E+00$	$0.48231E+00$	$0.48167E+00$	$0.48115E+00$	$0.48064E+00$	$0.48014E+00$	$0.47963E+00$
13	$0.46083E+00$	$0.45976E+00$	$0.45885E+00$	$0.45806E+00$	$0.45734E+00$	$0.45671E+00$	$0.45619E+00$	$0.45568E+00$	$0.45517E+00$	$0.45467E+00$
12	$0.43240E+00$	$0.43135E+00$	$0.43046E+00$	$0.42968E+00$	$0.42897E+00$	$0.42835E+00$	$0.42782E+00$	$0.42731E+00$	$0.42680E+00$	$0.42629E+00$
11	$0.39923E+00$	$0.39820E+00$	$0.39732E+00$	$0.39656E+00$	$0.39586E+00$	$0.39525E+00$	$0.39471E+00$	$0.39418E+00$	$0.39366E+00$	$0.39314E+00$
10	$0.35997E+00$	$0.35896E+00$	$0.35811E+00$	$0.35736E+00$	$0.35668E+00$	$0.35607E+00$	$0.35552E+00$	$0.35499E+00$	$0.35446E+00$	$0.35393E+00$
9	$0.31407E+00$	$0.31311E+00$	$0.31229E+00$	$0.31158E+00$	$0.31093E+00$	$0.31034E+00$	$0.30980E+00$	$0.30927E+00$	$0.30874E+00$	$0.30821E+00$
8	$0.26291E+00$	$0.26203E+00$	$0.26129E+00$	$0.26064E+00$	$0.26005E+00$	$0.25950E+00$	$0.25899E+00$	$0.25849E+00$	$0.25800E+00$	$0.25750E+00$
7	$0.21012E+00$	$0.20936E+00$	$0.20873E+00$	$0.20817E+00$	$0.20767E+00$	$0.20720E+00$	$0.20675E+00$	$0.20632E+00$	$0.20589E+00$	$0.20545E+00$
6	$0.16001E+00$	$0.15941E+00$	$0.15891E+00$	$0.15847E+00$	$0.15807E+00$	$0.15769E+00$	$0.15734E+00$	$0.15699E+00$	$0.15664E+00$	$0.15629E+00$
5	$0.11559E+00$	$0.11515E+00$	$0.11478E+00$	$0.11445E+00$	$0.11416E+00$	$0.11388E+00$	$0.11361E+00$	$0.11335E+00$	$0.11310E+00$	$0.11284E+00$
4	$0.77894E-01$	$0.77594E-01$	$0.77340E-01$	$0.77119E-01$	$0.76918E-01$	$0.76729E-01$	$0.76548E-01$	$0.76371E-01$	$0.76196E-01$	$0.76020E-01$
3	$0.46634E-01$	$0.46453E-01$	$0.46301E-01$	$0.46168E-01$	$0.46047E-01$	$0.45934E-01$	$0.45825E-01$	$0.45719E-01$	$0.45613E-01$	$0.45507E-01$
2	$0.20981E-01$	$0.20900E-01$	$0.20832E-01$	$0.20772E-01$	$0.20717E-01$	$0.20666E-01$	$0.20617E-01$	$0.20569E-01$	$0.20522E-01$	$0.20474E-01$
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 .9 0.94799E+00 0.95048E+00 0.95362E+00 0.95810E+00 0.96493E+00 0.97223E+00 0.97385E+00 0.97619E+00 0.97934E+00 0.98331E+00
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48	0.42328E-01	0.10254E+00	0.90168E-01	0.70106E-01	0.58755E-01	0.52347E-01	0.48696E-01	0.46489E-01	0.45780E-01	0.45785E-01
47	0.36739E-01	0.88821E-01	0.78703E-01	0.61282E-01	0.51404E-01	0.45833E-01	0.42667E-01	0.40760E-01	0.40166E-01	0.40195E-01
46	0.31625E-01	0.76269E-01	0.68068E-01	0.53086E-01	0.44576E-01	0.39782E-01	0.37067E-01	0.35438E-01	0.34949E-01	0.34997E-01
45	0.27018E-01	0.64963E-01	0.58367E-01	0.45601E-01	0.38341E-01	0.34256E-01	0.31952E-01	0.30575E-01	0.30181E-01	0.30245E-01
44	0.22925E-01	0.54920E-01	0.49652E-01	0.38869E-01	0.32734E-01	0.29287E-01	0.27352E-01	0.26201E-01	0.25891E-01	0.25968E-01
43	0.19334E-01	0.46110E-01	0.41930E-01	0.32899E-01	0.27761E-01	0.24879E-01	0.23271E-01	0.22321E-01	0.22085E-01	0.22172E-01
42	0.16218E-01	0.38467E-01	0.35171E-01	0.27669E-01	0.23405E-01	0.21019E-01	0.19697E-01	0.18921E-01	0.18749E-01	0.18844E-01
41	0.13540E-01	0.31898E-01	0.29319E-01	0.23137E-01	0.19631E-01	0.17674E-01	0.16599E-01	0.15975E-01	0.15858E-01	0.15959E-01
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38	0.77002E-02	0.17578E-01	0.16417E-01	0.13136E-01	0.11301E-01	0.10291E-01	0.97623E-02	0.94709E-02	0.94729E-02	0.95856E-02
37	0.63400E-02	0.14243E-01	0.13384E-01	0.10783E-01	0.93410E-02	0.85537E-02	0.81533E-02	0.79400E-02	0.79698E-02	0.80847E-02
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35	0.42650E-02	0.91553E-02	0.87358E-02	0.71746E-02	0.63363E-02	0.58905E-02	0.56867E-02	0.55929E-02	0.56649E-02	0.57830E-02
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33	0.28416E-02	0.56656E-02	0.55331E-02	0.46873E-02	0.42649E-02	0.40545E-02	0.39862E-02	0.39746E-02	0.40757E-02	0.41957E-02
32	0.22818E-02	0.43524E-02	0.43081E-02	0.37573E-02	0.34904E-02	0.33680E-02	0.33503E-02	0.33695E-02	0.34814E-02	0.36020E-02
31	0.17492E-02	0.32187E-02	0.32269E-02	0.29126E-02	0.27783E-02	0.27517E-02	0.27980E-02	0.28708E-02	0.29916E-02	0.31127E-02
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29	0.91712E-03	0.15968E-02	0.16274E-02	0.15167E-02	0.14983E-02	0.15459E-02	0.16400E-02	0.17690E-02	0.19369E-02	0.21340E-02
28	0.65900E-03	0.11197E-02	0.11430E-02	0.10709E-02	0.10626E-02	0.11010E-02	0.11741E-02	0.12758E-02	0.14115E-02	0.15792E-02
27	0.47791E-03	0.79390E-03	0.81004E-03	0.76062E-03	0.75523E-03	0.78250E-03	0.83442E-03	0.90729E-03	0.10058E-02	0.11303E-02
26	0.35109E-03	0.57145E-03	0.58221E-03	0.54695E-03	0.54241E-03	0.56069E-03	0.59621E-03	0.64648E-03	0.71496E-03	0.80219E-03
25	0.26142E-03	0.41790E-03	0.42499E-03	0.39913E-03	0.39503E-03	0.40702E-03	0.43107E-03	0.46534E-03	0.51224E-03	0.57216E-03
24	0.19702E-03	0.31006E-03	0.31477E-03	0.29547E-03	0.29183E-03	0.29969E-03	0.31608E-03	0.33954E-03	0.37174E-03	0.41283E-03
23	0.14994E-03	0.23279E-03	0.23597E-03	0.22145E-03	0.21835E-03	0.22359E-03	0.23490E-03	0.25121E-03	0.27359E-03	0.30205E-03
22	0.11493E-03	0.17631E-03	0.17853E-03	0.16757E-03	0.16504E-03	0.16862E-03	0.17661E-03	0.18815E-03	0.20397E-03	0.22401E-03
21	0.88492E-04	0.13428E-03	0.13588E-03	0.12762E-03	0.12564E-03	0.12818E-03	0.13395E-03	0.14228E-03	0.15368E-03	0.16804E-03
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19	0.52702E-04	0.78284E-04	0.79205E-04	0.74629E-04	0.73550E-04	0.74984E-04	0.78192E-04	0.82783E-04	0.89006E-04	0.96763E-04
18	0.40596E-04	0.59603E-04	0.60334E-04	0.56998E-04	0.56264E-04	0.57398E-04	0.59851E-04	0.63331E-04	0.68017E-04	0.73829E-04
17	0.31151E-04	0.45139E-04	0.45731E-04	0.43352E-04	0.42893E-04	0.43814E-04	0.45713E-04	0.48376E-04	0.51931E-04	0.56320E-04
16	0.23764E-04	0.33910E-04	0.34397E-04	0.32753E-04	0.32507E-04	0.33270E-04	0.34753E-04	0.36800E-04	0.39509E-04	0.42837E-04
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13	0.99322E-05	0.13248E-04	0.13529E-04	0.13162E-04	0.13265E-04	0.13717E-04	0.14430E-04	0.15360E-04	0.16543E-04	0.17974E-04
12	0.71943E-05	0.92929E-05	0.95233E-05	0.93651E-05	0.95103E-05	0.98848E-05	0.10436E-04	0.11139E-04	0.12020E-04	0.13080E-04
11	0.50873E-05	0.63315E-05	0.65162E-05	0.64897E-05	0.66484E-05	0.69509E-05	0.73687E-05	0.78903E-05	0.85337E-05	0.93034E-05
10	0.34885E-05	0.41685E-05	0.43111E-05	0.43547E-05	0.45040E-05	0.47388E-05	0.50460E-05	0.54218E-05	0.58784E-05	0.64217E-05
9	0.23021E-05	0.26413E-05	0.27455E-05	0.28133E-05	0.29375E-05	0.31098E-05	0.33258E-05	0.35854E-05	0.38968E-05	0.42657E-05
8	0.14504E-05	0.16059E-05	0.16770E-05	0.17405E-05	0.18323E-05	0.19501E-05	0.20932E-05	0.22631E-05	0.24648E-05	0.27029E-05
7	0.86551E-06	0.93328E-06	0.97808E-06	0.10248E-05	0.10855E-05	0.11597E-05	0.12482E-05	0.13523E-05	0.14751E-05	0.16197E-05
6	0.48418E-06	0.51355E-06	0.53943E-06	0.56861E-06	0.60451E-06	0.64740E-06	0.69791E-06	0.75710E-06	0.82661E-06	0.90838E-06
5	0.24911E-06	0.26194E-06	0.27547E-06	0.29130E-06	0.31029E-06	0.33272E-06	0.35898E-06	0.38968E-06	0.42566E-06	0.46796E-06
4	0.11312E-06	0.11849E-06	0.12468E-06	0.13202E-06	0.14075E-06	0.15101E-06	0.16299E-06	0.17698E-06	0.19336E-06	0.21261E-06
3	0.41075E-07	0.42963E-07	0.45215E-07	0.47905E-07	0.51089E-07	0.54821E-07	0.59178E-07	0.64264E-07	0.70218E-07	0.77214E-07
2	0.87004E-08	0.90969E-08	0.95743E-08	0.10145E-07	0.10820E-07	0.11611E-07	0.12534E-07	0.13612E-07	0.14873E-07	0.16355E-07
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48	0.46276E-01	0.46816E-01	0.47083E-01	0.47424E-01	0.47368E-01	0.46677E-01	0.45585E-01	0.43826E-01	0.41929E-01	0.39393E-01
47	0.40647E-01	0.41153E-01	0.41416E-01	0.41749E-01	0.41736E-01	0.41164E-01	0.40245E-01	0.38732E-01	0.37099E-01	0.34906E-01
46	0.35411E-01	0.35881E-01	0.36137E-01	0.36458E-01	0.36480E-01	0.36013E-01	0.35251E-01	0.33963E-01	0.32572E-01	0.30696E-01
45	0.30622E-01	0.31057E-01	0.31302E-01	0.31608E-01	0.31659E-01	0.31284E-01	0.30661E-01	0.29576E-01	0.28402E-01	0.26814E-01
44	0.26309E-01	0.26710E-01	0.26943E-01	0.27233E-01	0.27305E-01	0.27010E-01	0.26509E-01	0.25603E-01	0.24624E-01	0.23293E-01
43	0.22480E-01	0.22849E-01	0.23069E-01	0.23341E-01	0.23430E-01	0.23203E-01	0.22807E-01	0.22059E-01	0.21249E-01	0.20145E-01
42	0.19122E-01	0.19461E-01	0.19668E-01	0.19924E-01	0.20025E-01	0.19855E-01	0.19549E-01	0.18937E-01	0.18275E-01	0.17368E-01
41	0.16210E-01	0.16522E-01	0.16716E-01	0.16955E-01	0.17066E-01	0.16944E-01	0.16715E-01	0.16220E-01	0.15684E-01	0.14947E-01
40	0.13708E-01	0.13997E-01	0.14179E-01	0.14403E-01	0.14520E-01	0.14438E-01	0.14274E-01	0.13877E-01	0.13449E-01	0.12858E-01
39	0.11577E-01	0.11845E-01	0.12016E-01	0.12226E-01	0.12348E-01	0.12299E-01	0.12189E-01	0.11876E-01	0.11539E-01	0.11071E-01
38	0.97737E-02	0.10023E-01	0.10185E-01	0.10383E-01	0.10508E-01	0.10486E-01	0.10422E-01	0.10179E-01	0.99184E-02	0.95536E-02
37	0.82574E-02	0.84916E-02	0.86442E-02	0.88315E-02	0.89588E-02	0.89602E-02	0.89335E-02	0.87489E-02	0.85522E-02	0.82743E-02
36	0.69887E-02	0.72096E-02	0.73548E-02	0.75328E-02	0.76617E-02	0.76817E-02	0.76862E-02	0.75502E-02	0.74066E-02	0.72013E-02
35	0.59316E-02	0.61414E-02	0.62802E-02	0.64502E-02	0.65802E-02	0.66154E-02	0.66456E-02	0.65499E-02	0.64505E-02	0.63055E-02
34	0.50540E-02	0.52543E-02	0.53877E-02	0.55510E-02	0.56818E-02	0.57294E-02	0.57808E-02	0.57185E-02	0.56555E-02	0.55605E-02
33	0.43274E-02	0.45199E-02	0.46487E-02	0.48063E-02	0.49376E-02	0.49954E-02	0.50643E-02	0.50294E-02	0.49966E-02	0.49428E-02
32	0.37273E-02	0.39133E-02	0.40383E-02	0.41911E-02	0.43227E-02	0.43889E-02	0.44721E-02	0.44599E-02	0.44519E-02	0.44322E-02
31	0.32328E-02	0.34133E-02	0.35351E-02	0.36840E-02	0.38158E-02	0.38888E-02	0.39838E-02	0.39902E-02	0.40026E-02	0.40109E-02
30	0.28258E-02	0.30019E-02	0.31210E-02	0.32666E-02	0.33986E-02	0.34772E-02	0.35818E-02	0.36035E-02	0.36326E-02	0.36639E-02
29	0.23507E-02	0.25599E-02	0.27418E-02	0.29235E-02	0.30557E-02	0.31388E-02	0.32513E-02	0.32856E-02	0.33284E-02	0.33787E-02
28	0.17800E-02	0.20070E-02	0.22486E-02	0.24882E-02	0.26842E-02	0.28411E-02	0.29800E-02	0.30245E-02	0.30786E-02	0.31444E-02
27	0.12839E-02	0.14665E-02	0.16769E-02	0.19138E-02	0.21618E-02	0.23988E-02	0.26007E-02	0.27352E-02	0.28568E-02	0.29522E-02
26	0.91130E-03	0.10436E-02	0.12009E-02	0.13859E-02	0.15932E-02	0.18142E-02	0.20399E-02	0.22573E-02	0.24587E-02	0.26248E-02
25	0.64740E-03	0.73929E-03	0.84979E-03	0.98208E-03	0.11343E-02	0.13032E-02	0.14857E-02	0.16765E-02	0.18757E-02	0.20785E-02
24	0.46439E-03	0.52732E-03	0.60316E-03	0.69444E-03	0.80054E-03	0.92008E-03	0.10521E-02	0.11946E-02	0.13497E-02	0.15172E-02
23	0.33762E-03	0.38084E-03	0.43272E-03	0.49509E-03	0.56763E-03	0.64968E-03	0.74101E-03	0.84078E-03	0.95117E-03	0.10733E-02
22	0.24890E-03	0.27893E-03	0.31475E-03	0.35757E-03	0.40715E-03	0.46306E-03	0.52529E-03	0.59342E-03	0.66922E-03	0.75379E-03
21	0.18577E-03	0.20700E-03	0.23211E-03	0.26190E-03	0.29614E-03	0.33449E-03	0.37697E-03	0.42333E-03	0.47486E-03	0.53240E-03
20	0.14001E-03	0.15528E-03	0.17320E-03	0.19429E-03	0.21832E-03	0.24501E-03	0.27436E-03	0.30618E-03	0.34139E-03	0.38054E-03
19	0.10623E-03	0.11740E-03	0.13041E-03	0.14561E-03	0.16278E-03	0.18169E-03	0.20231E-03	0.22450E-03	0.24889E-03	0.27584E-03
18	0.80882E-04	0.89168E-04	0.98759E-04	0.10989E-03	0.12237E-03	0.13601E-03	0.15077E-03	0.16653E-03	0.18373E-03	0.20259E-03
17	0.61623E-04	0.67828E-04	0.74980E-04	0.83232E-04	0.92434E-04	0.10243E-03	0.11318E-03	0.12457E-03	0.13693E-03	0.15039E-03
16	0.46843E-04	0.51518E-04	0.56889E-04	0.63063E-04	0.69919E-04	0.77336E-04	0.85269E-04	0.93639E-04	0.10266E-03	0.11243E-03
15	0.35423E-04	0.38951E-04	0.42999E-04	0.47638E-04	0.52778E-04	0.58324E-04	0.64236E-04	0.70454E-04	0.77124E-04	0.84320E-04
14	0.26564E-04	0.29220E-04	0.32267E-04	0.35753E-04	0.39611E-04	0.43771E-04	0.48198E-04	0.52846E-04	0.57817E-04	0.63167E-04
13	0.19681E-04	0.21668E-04	0.23948E-04	0.26554E-04	0.29439E-04	0.32553E-04	0.35866E-04	0.39344E-04	0.43056E-04	0.47048E-04
12	0.14340E-04	0.15808E-04	0.17495E-04	0.19423E-04	0.21561E-04	0.23872E-04	0.26334E-04	0.28921E-04	0.31681E-04	0.34650E-04
11	0.10216E-04	0.11280E-04	0.12506E-04	0.13908E-04	0.15465E-04	0.17154E-04	0.18956E-04	0.20855E-04	0.22880E-04	0.25063E-04
10	0.70645E-05	0.78151E-05	0.86821E-05	0.96737E-05	0.10779E-04	0.11982E-04	0.13269E-04	0.14629E-04	0.16081E-04	0.17650E-04
9	0.47012E-05	0.52106E-05	0.58006E-05	0.64763E-05	0.72319E-05	0.80572E-05	0.89427E-05	0.98819E-05	0.10886E-04	0.11974E-04
8	0.29836E-05	0.33126E-05	0.36945E-05	0.41324E-05	0.46235E-05	0.51618E-05	0.57409E-05	0.63572E-05	0.70170E-05	0.77344E-05
7	0.17900E-05	0.19899E-05	0.22225E-05	0.24894E-05	0.27894E-05	0.31191E-05	0.34746E-05	0.38539E-05	0.42606E-05	0.47037E-05
6	0.10047E-05	0.11178E-05	0.12495E-05	0.14008E-05	0.15711E-05	0.17585E-05	0.19610E-05	0.21773E-05	0.24095E-05	0.26630E-05
5	0.51777E-06	0.57629E-06	0.64448E-06	0.72285E-06	0.81113E-06	0.90839E-06	0.10135E-05	0.11260E-05	0.12467E-05	0.13786E-05
4	0.23528E-06	0.26192E-06	0.29297E-06	0.32865E-06	0.36887E-06	0.41319E-06	0.46110E-06	0.51237E-06	0.56743E-06	0.62760E-06
3	0.85451E-07	0.95129E-07	0.10641E-06	0.11938E-06	0.13400E-06	0.15010E-06	0.16752E-06	0.18616E-06	0.20618E-06	0.22805E-06
2	0.18100E-07	0.20150E-07	0.22540E-07	0.25287E-07	0.28383E-07	0.31795E-07	0.35484E-07	0.39432E-07	0.43671E-07	0.48304E-07
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9	0.40431E-01	0.35854E-01	0.30342E-01	0.22594E-01	0.12211E-01-0.74160E-03-0.17008E-01	0.00000E+00	0.00000E+00	0.00000E+00
8	0.36164E-01	0.32133E-01	0.27271E-01	0.20405E-01	0.11183E-01-0.36794E-03-0.14928E-01	0.00000E+00	0.00000E+00	0.00000E+00
7	0.32095E-01	0.28580E-01	0.24334E-01	0.18306E-01	0.10195E-01-0.77138E-05-0.12915E-01	0.00000E+00	0.00000E+00	0.00000E+00
6	0.28273E-01	0.25237E-01	0.21566E-01	0.16323E-01	0.92587E-02 0.33444E-03-0.10995E-01	0.00000E+00	0.00000E+00	0.00000E+00
5	0.24744E-01	0.22147E-01	0.19003E-01	0.14484E-01	0.83884E-02 0.65360E-03-0.91970E-02	0.00000E+00	0.00000E+00	0.00000E+00
4	0.21539E-01	0.19337E-01	0.16669E-01	0.12806E-01	0.75926E-02 0.94630E-03-0.75418E-02	0.00000E+00	0.00000E+00	0.00000E+00
3	0.18671E-01	0.16819E-01	0.14575E-01	0.11298E-01	0.68759E-02 0.12106E-02-0.60422E-02	0.00000E+00	0.00000E+00	0.00000E+00
2	0.16138E-01	0.14593E-01	0.12721E-01	0.99618E-02	0.62395E-02 0.14458E-02-0.47029E-02	0.00000E+00	0.00000E+00	0.00000E+00
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0	0.12020E-01	0.10969E-01	0.96986E-02	0.77780E-02	0.51973E-02 0.18323E-02-0.24939E-02	0.00000E+00	0.00000E+00	0.00000E+00
9	0.10387E-01	0.95305E-02	0.84968E-02	0.69083E-02	0.47813E-02 0.19869E-02-0.16066E-02	0.00000E+00	0.00000E+00	0.00000E+00
8	0.90002E-02	0.83078E-02	0.74747E-02	0.61680E-02	0.44268E-02 0.21189E-02-0.84793E-03	0.00000E+00	0.00000E+00	0.00000E+00
7	0.78299E-02	0.72755E-02	0.66114E-02	0.55422E-02	0.41269E-02 0.22307E-02-0.20411E-03	0.00000E+00	0.00000E+00	0.00000E+00
6	0.68479E-02	0.64091E-02	0.58863E-02	0.50163E-02	0.38747E-02 0.23248E-02-0.33876E-03	0.00000E+00	0.00000E+00	0.00000E+00
5	0.60278E-02	0.56851E-02	0.52803E-02	0.45765E-02	0.36635E-02 0.24037E-02-0.79403E-03	0.00000E+00	0.00000E+00	0.00000E+00
4	0.53456E-02	0.50827E-02	0.47758E-02	0.42102E-02	0.34876E-02 0.24695E-02-0.11741E-02	0.00000E+00	0.00000E+00	0.00000E+00
3	0.47799E-02	0.45831E-02	0.43572E-02	0.39062E-02	0.33416E-02 0.25241E-02-0.14902E-02	0.00000E+00	0.00000E+00	0.00000E+00
2	0.43120E-02	0.41698E-02	0.40109E-02	0.36546E-02	0.32206E-02 0.25694E-02-0.17522E-02	0.00000E+00	0.00000E+00	0.00000E+00
1	0.39260E-02	0.38287E-02	0.37250E-02	0.34468E-02	0.31207E-02 0.26068E-02-0.19688E-02	0.00000E+00	0.00000E+00	0.00000E+00
0	0.36081E-02	0.35478E-02	0.34895E-02	0.32756E-02	0.30384E-02 0.26376E-02-0.21475E-02	0.00000E+00	0.00000E+00	0.00000E+00
9	0.33467E-02	0.33167E-02	0.32958E-02	0.31348E-02	0.29706E-02 0.26630E-02-0.22946E-02	0.00000E+00	0.00000E+00	0.00000E+00
8	0.31320E-02	0.31269E-02	0.31367E-02	0.30191E-02	0.29150E-02 0.26838E-02-0.24156E-02	0.00000E+00	0.00000E+00	0.00000E+00
7	0.29558E-02	0.29712E-02	0.30061E-02	0.29241E-02	0.28693E-02 0.27010E-02-0.25150E-02	0.00000E+00	0.00000E+00	0.00000E+00
6	0.27313E-02	0.28287E-02	0.28990E-02	0.28462E-02	0.28318E-02 0.27150E-02-0.25965E-02	0.00000E+00	0.00000E+00	0.00000E+00
5	0.22826E-02	0.24784E-02	0.26421E-02	0.27308E-02	0.28011E-02 0.27265E-02-0.26634E-02	0.00000E+00	0.00000E+00	0.00000E+00
4	0.17011E-02	0.19046E-02	0.21292E-02	0.23613E-02	0.25654E-02 0.26702E-02-0.27181E-02	0.00000E+00	0.00000E+00	0.00000E+00
3	0.12118E-02	0.13724E-02	0.15628E-02	0.17864E-02	0.20447E-02 0.23273E-02-0.25664E-02	0.00000E+00	0.00000E+00	0.00000E+00
2	0.85098E-03	0.96588E-03	0.11060E-02	0.12782E-02	0.14929E-02 0.17642E-02-0.20966E-02	0.00000E+00	0.00000E+00	0.00000E+00
1	0.59874E-03	0.67769E-03	0.77505E-03	0.89694E-03	0.10537E-02 0.12623E-02-0.15447E-02	0.00000E+00	0.00000E+00	0.00000E+00
0	0.42560E-03	0.47920E-03	0.54544E-03	0.62884E-03	0.73736E-03 0.88498E-03-0.10929E-02	0.00000E+00	0.00000E+00	0.00000E+00
9	0.30668E-03	0.34321E-03	0.38823E-03	0.44482E-03	0.51858E-03 0.61963E-03-0.76427E-03	0.00000E+00	0.00000E+00	0.00000E+00
8	0.22404E-03	0.24928E-03	0.28020E-03	0.31884E-03	0.36901E-03 0.43764E-03-0.53619E-03	0.00000E+00	0.00000E+00	0.00000E+00
7	0.16558E-03	0.18334E-03	0.20493E-03	0.23172E-03	0.26624E-03 0.31318E-03-0.38029E-03	0.00000E+00	0.00000E+00	0.00000E+00
6	0.12340E-03	0.13612E-03	0.15149E-03	0.17041E-03	0.19459E-03 0.22719E-03-0.27338E-03	0.00000E+00	0.00000E+00	0.00000E+00
5	0.92356E-04	0.10163E-03	0.11277E-03	0.12638E-03	0.14364E-03 0.16670E-03-0.19904E-03	0.00000E+00	0.00000E+00	0.00000E+00
4	0.69122E-04	0.75971E-04	0.84148E-04	0.94097E-04	0.10663E-03 0.12323E-03-0.14628E-03	0.00000E+00	0.00000E+00	0.00000E+00
3	0.51483E-04	0.56574E-04	0.62630E-04	0.69977E-04	0.79194E-04 0.91312E-04-0.10799E-03	0.00000E+00	0.00000E+00	0.00000E+00
2	0.37948E-04	0.41730E-04	0.46220E-04	0.51663E-04	0.58475E-04 0.67383E-04-0.79554E-04	0.00000E+00	0.00000E+00	0.00000E+00
1	0.27489E-04	0.30273E-04	0.33577E-04	0.37583E-04	0.42596E-04 0.49131E-04-0.58014E-04	0.00000E+00	0.00000E+00	0.00000E+00
0	0.19398E-04	0.21405E-04	0.23789E-04	0.26686E-04	0.30315E-04 0.35038E-04-0.41442E-04	0.00000E+00	0.00000E+00	0.00000E+00
9	0.13189E-04	0.14587E-04	0.16250E-04	0.18276E-04	0.20821E-04 0.24134E-04-0.28623E-04	0.00000E+00	0.00000E+00	0.00000E+00
8	0.85368E-05	0.94630E-05	0.10566E-04	0.11915E-04	0.13614E-04 0.15829E-04-0.18832E-04	0.00000E+00	0.00000E+00	0.00000E+00
7	0.52005E-05	0.57751E-05	0.64606E-05	0.73013E-05	0.83630E-05 0.97492E-05-0.11632E-04	0.00000E+00	0.00000E+00	0.00000E+00
6	0.29474E-05	0.32770E-05	0.36706E-05	0.41543E-05	0.47663E-05 0.55665E-05-0.66553E-05	0.00000E+00	0.00000E+00	0.00000E+00
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3	0.25263E-06	0.28114E-06	0.31522E-06	0.35716E-06	0.41032E-06 0.47988E-06-0.57462E-06	0.00000E+00	0.00000E+00	0.00000E+00
2	0.53510E-07	0.59547E-07	0.66764E-07	0.75646E-07	0.86900E-07 0.10163E-06-0.12168E-06	0.00000E+00	0.00000E+00	0.00000E+00
1	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00 0.00000E+00-0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

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 9 0.32199E-04 0.31528E-04 0.30962E-04 0.30465E-04 0.27473E-04 0.23311E-04 0.22909E-04 0.22515E-04 0.22130E-04 0.21740E-04
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 2 0.79172E-08 0.77488E-08 0.76069E-08 0.74825E-08 0.73688E-08 0.72620E-08 0.71601E-08 0.70612E-08 0.69637E-08 0.68649E-08
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9 -0.22563E-01-0.22541E-01-0.22541E-01-0.22541E-01-0.22541E-01-0.22541E-01-0.22541E-01-0.22541E-01-0.22541E-01
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 .1 0.28127E-03 0.27804E-03 0.27804E-03 0.27804E-03 0.27804E-03 0.27804E-03 0.27804E-03 0.27804E-03
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 .7 0.13344E-03 0.13037E-03 0.13037E-03 0.13037E-03 0.13037E-03 0.13037E-03 0.13037E-03 0.13037E-03
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 .4 0.67966E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05
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 .2 0.67593E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08
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= 111 112 113 114 115 116 117 118
 .1 = 0.2411E+01 0.2752E+01 0.3110E+01 0.3473E+01 0.3829E+01 0.4172E+01 0.4501E+01 0.4817E+01

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 36 -0.11127E-02-0.11127E-02-0.11127E-02-0.11127E-02-0.11127E-02-0.11127E-02
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 15 0.84124E-05 0.84124E-05 0.84124E-05 0.84124E-05 0.84124E-05 0.84124E-05
 14 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05 0.66580E-05
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 7 0.63880E-06 0.63880E-06 0.63880E-06 0.63880E-06 0.63880E-06 0.63880E-06
 6 0.36384E-06 0.36384E-06 0.36384E-06 0.36384E-06 0.36384E-06 0.36384E-06
 5 0.18890E-06 0.18890E-06 0.18890E-06 0.18890E-06 0.18890E-06 0.18890E-06
 4 0.86122E-07 0.86122E-07 0.86122E-07 0.86122E-07 0.86122E-07 0.86122E-07
 3 0.31317E-07 0.31317E-07 0.31317E-07 0.31317E-07 0.31317E-07 0.31317E-07
 2 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08 0.66360E-08
 1 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

***** VISC-TOT *****

= 1 2 3 4 5 6 7 8 9 10

-1 = 0.4817E+01 0.4501E+01 0.4172E+01 0.3829E+01 0.3473E+01 0.3110E+01 0.2752E+01 0.2411E+01 0.2105E+01 0.1845E+01

49 0.00000E+00
 48 0.00000E+00
 47 0.00000E+00
 46 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00

=	11	12	13	14	15	16	17	18	19	20
1 =	0.1639E+01	0.1486E+01	0.1379E+01	0.1309E+01	0.1264E+01	0.1234E+01	0.1213E+01	0.1197E+01	0.1182E+01	0.1169E+01

= 21 22 23 24 25 26 27 28 29 30
-1 = 0.1155E+01 0.1142E+01 0.1128E+01 0.1115E+01 0.1100E+01 0.1084E+01 0.1067E+01 0.1046E+01 0.1022E+01 0.9934E+00

= 31 32 33 34 35 36 37 38 39

= 41 42 43 44 45 46 47 48 49 50

```
=      51          52          53          54          55          56          57          58          59          60
1   -0.235525E+00  -0.18785E+00  -0.17015E+00  -0.1525E+00  -0.1350E+00  -0.1175E+00  -0.1000E+00  -0.8250E-01  -0.6500E-01  -0.6500E-01
```

=	61	62	63	64	65	66	67	68	69	70
-1 =	0.8250E-01	0.1000E+00	0.1175E+00	0.1350E+00	0.1525E+00	0.1701E+00	0.1878E+00	0.2059E+00	0.2245E+00	0.2441E+00

= 71 72 73 74 75 76 77 78 79 80
 $1 = 0.36555E+00 \quad 0.38945E+00 \quad 0.31655E+00 \quad 0.34755E+00 \quad 0.38245E+00 \quad 0.42125E+00 \quad 0.46325E+00 \quad 0.50775E+00 \quad 0.55405E+00 \quad 0.60125E+00$

= 81 82 83 84 85 86 87 88 89 90
 $\cdot 1 = 0.64490E+00 \quad 0.69696E+00 \quad 0.74477E+00 \quad 0.79186E+00 \quad 0.8377E+00 \quad 0.8817E+00 \quad 0.9228E+00 \quad 0.9603E+00 \quad 0.9934E+00 \quad 0.1022E+01$

```

=      91      92      93      94      95      96      97      98      99      100
-1 =  0.1046E+01  0.1067E+01  0.1084E+01  0.1100E+01  0.1115E+01  0.1128E+01  0.1142E+01  0.1155E+01  0.1169E+01  0.1182E+01

```

= 101 102 103 104 105 106 107 108 109 110

i = 0.1197E+01 0.1213E+01 0.1234E+01 0.1264E+01 0.1309E+01 0.1379E+01 0.1486E+01 0.1639E+01 0.1845E+01 0.2105E+01

= 111 112 113 114 115 116 117 118

$$1 = 0.2411E+01 \quad 0.2752E+01 \quad 0.3110E+01 \quad 0.3473E+01 \quad 0.3829E+01 \quad 0.4172E+01 \quad 0.4501E+01 \quad 0.4817E+01$$

DT	TTIME	TPHYS	DT	SSTEST	J1	J2	J3	DUMAX	DWMAX	DVMAX
1	0.10000E-01	0.14408E-04	0.10000E-01	0.81214E-01	104	1	29	-0.81214E-01	0.00000E+00	0.47272E-01
***** CFINF-X1 *****										
=	1	2	3	4	5	6	7	8	9	10
-1 =	0.4817E+01	0.4501E+01	0.4172E+01	0.3829E+01	0.3473E+01	0.3110E+01	0.2752E+01	0.2411E+01	0.2105E+01	0.1845E+01
1	0.79368E-04	0.79892E-04	0.80433E-04	0.80973E-04	0.81547E-04	0.82122E-04	0.82579E-04	0.83027E-04	0.83299E-04	0.83505E-04
=	11	12	13	14	15	16	17	18	19	20
-1 =	0.1639E+01	0.1486E+01	0.1379E+01	0.1309E+01	0.1264E+01	0.1234E+01	0.1213E+01	0.1197E+01	0.1182E+01	0.1169E+01
1	0.83669E-04	0.83792E-04	0.83877E-04	0.83403E-04	0.82671E-04	0.24913E-02	0.25011E-02	0.25092E-02	0.25158E-02	0.25204E-02
=	21	22	23	24	25	26	27	28	29	30
-1 =	0.1155E+01	0.1142E+01	0.1128E+01	0.1115E+01	0.1100E+01	0.1084E+01	0.1067E+01	0.1046E+01	0.1022E+01	0.9934E+00
1	0.25309E-02	0.25343E-02	0.25322E-02	0.25330E-02	0.25396E-02	0.25469E-02	0.25552E-02	0.25649E-02	0.25791E-02	0.25506E-02
=	31	32	33	34	35	36	37	38	39	40
-1 =	0.9603E+00	0.9228E+00	0.8817E+00	0.8377E+00	0.7918E+00	0.7447E+00	0.6969E+00	0.6490E+00	0.6012E+00	0.5540E+00
1	0.25254E-02	0.25343E-02	0.25858E-02	0.26259E-02	0.26643E-02	0.27042E-02	0.27463E-02	0.27906E-02	0.28373E-02	0.28894E-02
=	41	42	43	44	45	46	47	48	49	50
-1 =	0.5077E+00	0.4632E+00	0.4212E+00	0.3824E+00	0.3475E+00	0.3165E+00	0.2894E+00	0.2655E+00	0.2441E+00	0.2245E+00
1	0.29461E-02	0.30056E-02	0.30716E-02	0.31396E-02	0.32083E-02	0.32801E-02	0.33472E-02	0.34171E-02	0.34883E-02	0.35560E-02

```

=      51          52          53          54          55          56          57          58          59          60
1 =  0.2059E+00  0.1878E+00  0.1701E+00  0.1525E+00  0.1350E+00  0.1175E+00  0.1000E+00  0.8250E-01  0.6500E-01  0.6500E-01

1  0.36346E-02  0.37215E-02  0.38092E-02  0.39238E-02  0.40316E-02  0.41181E-02  0.38966E-02  0.00000E+00  0.00000E+00  0.00000E+00

=      61          62          63          64          65          66          67          68          69          70
1 =  0.8250E-01  0.1000E+00  0.1175E+00  0.1350E+00  0.1525E+00  0.1701E+00  0.1878E+00  0.2059E+00  0.2245E+00  0.2441E+00

1  0.00000E+00  0.38966E-02  0.41181E-02  0.40316E-02  0.39238E-02  0.38092E-02  0.37215E-02  0.36346E-02  0.35560E-02  0.34883E-02

=      71          72          73          74          75          76          77          78          79          80
1 =  0.2655E+00  0.2894E+00  0.3165E+00  0.3475E+00  0.3824E+00  0.4212E+00  0.4632E+00  0.5077E+00  0.5540E+00  0.6012E+00

1  0.34171E-02  0.33472E-02  0.32801E-02  0.32083E-02  0.31396E-02  0.30716E-02  0.30056E-02  0.29461E-02  0.28894E-02  0.28373E-02

=      81          82          83          84          85          86          87          88          89          90
1 =  0.6490E+00  0.6969E+00  0.7447E+00  0.7918E+00  0.8377E+00  0.8817E+00  0.9228E+00  0.9603E+00  0.9934E+00  0.1022E+01

1  0.27906E-02  0.27463E-02  0.27042E-02  0.26643E-02  0.26259E-02  0.25858E-02  0.25343E-02  0.25254E-02  0.25506E-02  0.25791E-02

=      91          92          93          94          95          96          97          98          99          100
1 =  0.1046E+01  0.1067E+01  0.1084E+01  0.1100E+01  0.1115E+01  0.1128E+01  0.1142E+01  0.1155E+01  0.1169E+01  0.1182E+01

1  0.25649E-02  0.25552E-02  0.25469E-02  0.25396E-02  0.25330E-02  0.25322E-02  0.25343E-02  0.25309E-02  0.25204E-02  0.25158E-02

=     101         102         103         104         105         106         107         108         109         110

```

1 = 0.1197E+01 0.1213E+01 0.1234E+01 0.1264E+01 0.1309E+01 0.1379E+01 0.1486E+01 0.1639E+01 0.1845E+01 0.2105E+01

1 0.25092E-02 0.25011E-02 0.24912E-02 0.82669E-04 0.83403E-04 0.83877E-04 0.83792E-04 0.83669E-04 0.83505E-04 0.83299E-04

= 111 112 113 114 115 116 117 118

1 = 0.2411E+01 0.2752E+01 0.3110E+01 0.3473E+01 0.3829E+01 0.4172E+01 0.4501E+01 0.4817E+01

1 0.83027E-04 0.82579E-04 0.82122E-04 0.81547E-04 0.80973E-04 0.80433E-04 0.79892E-04 0.79368E-04

***** DELSTR-1 *****

= 1 2 3 4 5 6 7 8 9 10

1 = 0.4817E+01 0.4501E+01 0.4172E+01 0.3829E+01 0.3473E+01 0.3110E+01 0.2752E+01 0.2411E+01 0.2105E+01 0.1845E+01

1 0.23346E-02 0.23498E-02 0.23655E-02 0.23818E-02 0.23987E-02 0.24157E-02 0.24324E-02 0.24480E-02 0.24619E-02 0.24737E-02

= 11 12 13 14 15 16 17 18 19 20

1 = 0.1639E+01 0.1486E+01 0.1379E+01 0.1309E+01 0.1264E+01 0.1234E+01 0.1213E+01 0.1197E+01 0.1182E+01 0.1169E+01

1 0.24830E-02 0.24900E-02 0.24922E-02 0.25009E-02 0.26045E-02 0.17231E-02 0.16878E-02 0.16599E-02 0.16353E-02 0.16113E-02

= 21 22 23 24 25 26 27 28 29 30

1 = 0.1155E+01 0.1142E+01 0.1128E+01 0.1115E+01 0.1100E+01 0.1084E+01 0.1067E+01 0.1046E+01 0.1022E+01 0.9934E+00

1 0.15891E-02 0.15688E-02 0.15502E-02 0.15329E-02 0.15151E-02 0.14957E-02 0.14740E-02 0.14491E-02 0.14203E-02 0.13993E-02

= 31 32 33 34 35 36 37 38 39 40

$-1 = 0.9603E+00 \quad 0.9228E+00 \quad 0.8817E+00 \quad 0.8377E+00 \quad 0.7918E+00 \quad 0.7447E+00 \quad 0.6969E+00 \quad 0.6490E+00 \quad 0.6012E+00 \quad 0.5540E+00$
 1 $0.14060E-02 \quad 0.14351E-02 \quad 0.14435E-02 \quad 0.14340E-02 \quad 0.14101E-02 \quad 0.13763E-02 \quad 0.13346E-02 \quad 0.12870E-02 \quad 0.12341E-02 \quad 0.11774E-02$

 $= \quad 41 \quad 42 \quad 43 \quad 44 \quad 45 \quad 46 \quad 47 \quad 48 \quad 49 \quad 50$
 $-1 = 0.5077E+00 \quad 0.4632E+00 \quad 0.4212E+00 \quad 0.3824E+00 \quad 0.3475E+00 \quad 0.3165E+00 \quad 0.2894E+00 \quad 0.2655E+00 \quad 0.2441E+00 \quad 0.2245E+00$
 1 $0.11183E-02 \quad 0.10566E-02 \quad 0.99469E-03 \quad 0.93374E-03 \quad 0.87584E-03 \quad 0.82144E-03 \quad 0.77161E-03 \quad 0.72588E-03 \quad 0.68254E-03 \quad 0.64207E-03$

 $= \quad 51 \quad 52 \quad 53 \quad 54 \quad 55 \quad 56 \quad 57 \quad 58 \quad 59 \quad 60$
 $-1 = 0.2059E+00 \quad 0.1878E+00 \quad 0.1701E+00 \quad 0.1525E+00 \quad 0.1350E+00 \quad 0.1175E+00 \quad 0.1000E+00 \quad 0.8250E-01 \quad 0.6500E-01 \quad 0.6500E-01$
 1 $0.60213E-03 \quad 0.56131E-03 \quad 0.52118E-03 \quad 0.47848E-03 \quad 0.43558E-03 \quad 0.38929E-03 \quad 0.34996E-03 \quad 0.00000E+00 \quad 0.00000E+00 \quad 0.00000E+00$

 $= \quad 61 \quad 62 \quad 63 \quad 64 \quad 65 \quad 66 \quad 67 \quad 68 \quad 69 \quad 70$
 $-1 = 0.8250E-01 \quad 0.1000E+00 \quad 0.1175E+00 \quad 0.1350E+00 \quad 0.1525E+00 \quad 0.1701E+00 \quad 0.1878E+00 \quad 0.2059E+00 \quad 0.2245E+00 \quad 0.2441E+00$
 1 $0.00000E+00 \quad 0.34996E-03 \quad 0.38929E-03 \quad 0.43558E-03 \quad 0.47848E-03 \quad 0.52118E-03 \quad 0.56131E-03 \quad 0.60213E-03 \quad 0.64207E-03 \quad 0.68254E-03$

 $= \quad 71 \quad 72 \quad 73 \quad 74 \quad 75 \quad 76 \quad 77 \quad 78 \quad 79 \quad 80$
 $-1 = 0.2655E+00 \quad 0.2894E+00 \quad 0.3165E+00 \quad 0.3475E+00 \quad 0.3824E+00 \quad 0.4212E+00 \quad 0.4632E+00 \quad 0.5077E+00 \quad 0.5540E+00 \quad 0.6012E+00$
 1 $0.72588E-03 \quad 0.77161E-03 \quad 0.82144E-03 \quad 0.87584E-03 \quad 0.93374E-03 \quad 0.99469E-03 \quad 0.10566E-02 \quad 0.11183E-02 \quad 0.11774E-02 \quad 0.12341E-02$

 $= \quad 81 \quad 82 \quad 83 \quad 84 \quad 85 \quad 86 \quad 87 \quad 88 \quad 89 \quad 90$
 $-1 = 0.6490E+00 \quad 0.6969E+00 \quad 0.7447E+00 \quad 0.7918E+00 \quad 0.8377E+00 \quad 0.8817E+00 \quad 0.9228E+00 \quad 0.9603E+00 \quad 0.9934E+00 \quad 0.1022E+01$
 1 $0.12870E-02 \quad 0.13346E-02 \quad 0.13763E-02 \quad 0.14101E-02 \quad 0.14340E-02 \quad 0.14435E-02 \quad 0.14351E-02 \quad 0.14060E-02 \quad 0.13993E-02 \quad 0.14203E-02$

= 91 92 93 94 95 96 97 98 99 100
 1 = 0.1046E+01 0.1067E+01 0.1084E+01 0.1100E+01 0.1115E+01 0.1128E+01 0.1142E+01 0.1155E+01 0.1169E+01 0.1182E+01
 1 0.14491E-02 0.14740E-02 0.14957E-02 0.15151E-02 0.15329E-02 0.15502E-02 0.15688E-02 0.15891E-02 0.16113E-02 0.16353E-02

 = 101 102 103 104 105 106 107 108 109 110
 1 = 0.1197E+01 0.1213E+01 0.1234E+01 0.1264E+01 0.1309E+01 0.1379E+01 0.1486E+01 0.1639E+01 0.1845E+01 0.2105E+01
 1 0.16599E-02 0.16878E-02 0.17231E-02 0.26045E-02 0.25009E-02 0.24922E-02 0.24900E-02 0.24830E-02 0.24737E-02 0.24619E-02

 = 111 112 113 114 115 116 117 118
 1 = 0.2411E+01 0.2752E+01 0.3110E+01 0.3473E+01 0.3829E+01 0.4172E+01 0.4501E+01 0.4817E+01
 1 0.24480E-02 0.24324E-02 0.24157E-02 0.23987E-02 0.23818E-02 0.23655E-02 0.23498E-02 0.23346E-02

 ***** THETA-X1 *****

 = 1 2 3 4 5 6 7 8 9 10
 1 = 0.4817E+01 0.4501E+01 0.4172E+01 0.3829E+01 0.3473E+01 0.3110E+01 0.2752E+01 0.2411E+01 0.2105E+01 0.1845E+01
 1 0.95130E-03 0.95025E-03 0.94905E-03 0.94769E-03 0.94615E-03 0.94442E-03 0.94257E-03 0.94067E-03 0.93882E-03 0.93716E-03

 = 11 12 13 14 15 16 17 18 19 20
 1 = 0.1639E+01 0.1486E+01 0.1379E+01 0.1309E+01 0.1264E+01 0.1234E+01 0.1213E+01 0.1197E+01 0.1182E+01 0.1169E+01

1 0.93578E-03 0.93476E-03 0.93440E-03 0.94029E-03 0.10077E-02 0.11226E-02 0.11017E-02 0.10852E-02 0.10704E-02 0.10555E-02
 = 21 22 23 24 25 26 27 28 29 30
 -1 = 0.1155E+01 0.1142E+01 0.1128E+01 0.1115E+01 0.1100E+01 0.1084E+01 0.1067E+01 0.1046E+01 0.1022E+01 0.9934E+00
 1 0.10424E-02 0.10300E-02 0.10186E-02 0.10075E-02 0.99592E-03 0.98331E-03 0.96911E-03 0.95272E-03 0.93358E-03 0.91817E-03
 = 31 32 33 34 35 36 37 38 39 40
 -1 = 0.9603E+00 0.9228E+00 0.8817E+00 0.8377E+00 0.7918E+00 0.7447E+00 0.6969E+00 0.6490E+00 0.6012E+00 0.5540E+00
 1 0.91462E-03 0.91790E-03 0.90894E-03 0.89111E-03 0.86550E-03 0.83578E-03 0.80245E-03 0.76646E-03 0.72723E-03 0.68760E-03
 = 41 42 43 44 45 46 47 48 49 50
 -1 = 0.5077E+00 0.4632E+00 0.4212E+00 0.3824E+00 0.3475E+00 0.3165E+00 0.2894E+00 0.2655E+00 0.2441E+00 0.2245E+00
 1 0.64736E-03 0.60536E-03 0.56556E-03 0.52664E-03 0.49000E-03 0.45702E-03 0.42625E-03 0.39923E-03 0.37399E-03 0.34982E-03
 = 51 52 53 54 55 56 57 58 59 60
 -1 = 0.2059E+00 0.1878E+00 0.1701E+00 0.1525E+00 0.1350E+00 0.1175E+00 0.1000E+00 0.8250E-01 0.6500E-01 0.6500E-01
 1 0.32712E-03 0.30410E-03 0.28075E-03 0.25730E-03 0.23269E-03 0.20624E-03 0.17823E-03 0.00000E+00 0.00000E+00 0.00000E+00
 = 61 62 63 64 65 66 67 68 69 70
 -1 = 0.8250E-01 0.1000E+00 0.1175E+00 0.1350E+00 0.1525E+00 0.1701E+00 0.1878E+00 0.2059E+00 0.2245E+00 0.2441E+00
 1 0.00000E+00 0.17823E-03 0.20624E-03 0.23269E-03 0.25730E-03 0.28075E-03 0.30410E-03 0.32712E-03 0.34982E-03 0.37399E-03

	71	72	73	74	75	76	77	78	79	80
-1 =	0.2655E+00	0.2894E+00	0.3165E+00	0.3475E+00	0.3824E+00	0.4212E+00	0.4632E+00	0.5077E+00	0.5540E+00	0.6012E+00
1	0.39923E-03	0.42625E-03	0.45702E-03	0.49000E-03	0.52664E-03	0.56556E-03	0.60536E-03	0.64736E-03	0.68760E-03	0.72723E-03
<hr/>										
	81	82	83	84	85	86	87	88	89	90
-1 =	0.6490E+00	0.6969E+00	0.7447E+00	0.7918E+00	0.8377E+00	0.8817E+00	0.9228E+00	0.9603E+00	0.9934E+00	0.1022E+01
1	0.76646E-03	0.80245E-03	0.83578E-03	0.86550E-03	0.89111E-03	0.90894E-03	0.91790E-03	0.91462E-03	0.91817E-03	0.93358E-03
<hr/>										
	91	92	93	94	95	96	97	98	99	100
-1 =	0.1046E+01	0.1067E+01	0.1084E+01	0.1100E+01	0.1115E+01	0.1128E+01	0.1142E+01	0.1155E+01	0.1169E+01	0.1182E+01
1	0.95272E-03	0.96911E-03	0.98331E-03	0.99592E-03	0.10075E-02	0.10186E-02	0.10300E-02	0.10424E-02	0.10555E-02	0.10704E-02
<hr/>										
	101	102	103	104	105	106	107	108	109	110
-1 =	0.1197E+01	0.1213E+01	0.1234E+01	0.1264E+01	0.1309E+01	0.1379E+01	0.1486E+01	0.1639E+01	0.1845E+01	0.2105E+01
1	0.10852E-02	0.11017E-02	0.11226E-02	0.10077E-02	0.94029E-03	0.93440E-03	0.93476E-03	0.93578E-03	0.93716E-03	0.93882E-03
<hr/>										
	111	112	113	114	115	116	117	118		
-1 =	0.2411E+01	0.2752E+01	0.3110E+01	0.3473E+01	0.3829E+01	0.4172E+01	0.4501E+01	0.4817E+01		
1	0.94067E-03	0.94257E-03	0.94442E-03	0.94615E-03	0.94769E-03	0.94905E-03	0.95025E-03	0.95130E-03		



Report Documentation Page

1. Report No. NASA CR-182024	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Extension of a Three-Dimensional Viscous Wing Flow Analysis User's Manual - VISTA 3-D Code		5. Report Date May 1990	
		6. Performing Organization Code	
7. Author(s) B.C. Weinberg, S.-Y. Chen, S.J. Thoren and S.J. Shamroth		8. Performing Organization Report No. SRA 900049-UM	
		10. Work Unit No. 505-63-21-01	
9. Performing Organization Name and Address Scientific Research Associates, Inc. 50 Nye Road, P.O. Box 1058 Glastonbury, CT 06033		11. Contract or Grant No. NAS1-18140	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Langley Research Center Hampton, VA 23665-5225		13. Type of Report and Period Covered Contractor Report	
15. Supplementary Notes Langley Technical Monitor: James T. Howlett			
16. Abstract Three-dimensional unsteady viscous effects can significantly influence the performance of fixed and rotary wing aircraft. These effects are important in both flows about helicopter rotors in forward flight and flows about three-dimensional (swept and tapered) supercritical wings. A computational procedure for calculating such flow field is developed, and therefore would be of great value in the design process as well as in understanding the corresponding flow phenomena.			
<p>The procedure is based upon an alternating direction technique employing the Linearized Block Implicit method for solving three-dimensional viscous flow problems. In order to demonstrate the viability of this method, two- and three-dimensional problems are computed. These include the flow over a two-dimensional NACA 0012 airfoil under steady and oscillating conditions, and the steady, skewed, three-dimensional flow on a flat plate. Although actual three-dimensional flows over wings were not obtained, the ground work was laid for considering such flows. In this report a description of the computer code is given.</p>			
17. Key Words (Suggested by Author(s)) Viscous, two- and three-dimensional, unsteady		18. Distribution Statement Unclassified - Unlimited Subject Category 02	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of pages 105	22. Price