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TEXSTAN(academic)
s30.dat, lam, pipe, CEF, Ts(x)
stepsize: variable from dx= .010 to dx= 1.000
energy eqn: solved, no source terms
kfluid= 1 const props
  po= 1.01325E+05  den= 1.17660E+00  vis= 1.85300E-05  sp_ht= 1.00500E+03
  prc(je)= .711
initial profiles: kstart= 1  dyi= 5.000E-04  rate= .0900
laminar flow
axx= 0.0000E+00  bxx= 0.0000E+00  cxx= 0.0000E+00  dxx= 0.0000E+00
exx= 0.0000E+00  fxx= 0.0000E+00  gxx= 0.0000E+00
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Laminar flow in a circular pipe benchmark test
cf,theo = 16.0/re,dh
nu,theo = 3.66, based on f/d flow w/ const wall temp
re,dh = 1.0000E+03  prm = .711
=====

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intg	x/dh/re	cf*re	uclr	xplus	nu	th,cl	tm/ts	ts	qflux
5	.00003	137.95	1.037	.00007	58.149	1.018	.968	3.100E+02	2.137E+02
50	.00025	55.81	1.104	.00070	20.347	1.057	.969	3.100E+02	7.203E+01
100	.00050	43.41	1.144	.00141	14.911	1.083	.970	3.100E+02	5.153E+01
150	.00092	35.35	1.192	.00260	11.424	1.117	.971	3.100E+02	3.828E+01
200	.00206	27.77	1.280	.00580	8.195	1.186	.973	3.100E+02	2.585E+01
250	.00510	22.11	1.429	.01433	5.840	1.331	.976	3.100E+02	1.642E+01
300	.01240	18.63	1.652	.03488	4.454	1.580	.980	3.100E+02	1.021E+01
350	.02392	17.06	1.839	.06729	3.903	1.742	.985	3.100E+02	6.857E+00
400	.04137	16.33	1.947	.11636	3.709	1.793	.990	3.100E+02	4.503E+00
450	.06550	16.07	1.986	.18425	3.665	1.799	.994	3.100E+02	2.706E+00
500	.09050	16.01	1.995	.25457	3.659	1.799	.996	3.100E+02	1.619E+00
519	.10000	16.01	1.996	.28129	3.658	1.798	.997	3.100E+02	1.332E+00