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      FORTAN SOURCE CODE FOR FUNCTION "CINT"
      filename: "INTEGRAL1.FTN"
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00001 FTN7X,S,L,Q,E   Line 1 is specific to the HP1000
00002 C *****
00003 C THIS FUNCTION PERFORMS GAUSS-QUAD. INTEGRATION WITH
00004 C 48 POINTS.   Ref: Abramowitz & Stegan 25.4.30
00005 C *****
00006 C COMPLEX FUNCTION CINT(ICHOSE,R)
00007 C IMPLICIT COMPLEX(C)
00008 C DIMENSION X(24),W(24)
00009 C COMMON/THREE/D1,H,D2,D3,D4,D5,D6
00010
00011 XI=0.0
00012 XF=H
00013 A=XI
00014 B=XF
00015
00016 C      Matrix of xi and wi:
00017 X(1) = .032380170962869362033
00018 X(2) = 0.09700469920946269893
00019 X(3) = 0.161222356068891718056
00020 X(4) = 0.224763790394689061225
00021 X(5) = 0.287362487355455576736
00022 X(6) = 0.34875588629216073816
00023 X(7) = 0.408686481990716729916
00024 X(8) = 0.466902904750958404545
00025 X(9) = 0.523160974722233033678
00026 X(10) = 0.577224726083972703818
00027 X(11) = 0.628867396776513623995
00028 X(12) = 0.677872379632663905212
00029 X(13) = 0.724034130923814654674
00030 X(14) = 0.767159032515740339254

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X(15) = 0.807066204029442627083
X(16) = 0.843588261624393537011
X(17) = 0.876572020274247885906
X(18) = 0.905879136715569672822
X(19) = 0.931386690706554333114
X(20) = 0.952987703160430860723
X(21) = 0.970591592546247250461
X(22) = 0.984124583722826857745
X(23) = 0.993530172266350757548
X(24) = 0.998771007252426118601
W(1) = 0.064737696812683922503
W(2) = 0.064466164435950082207
W(3) = 0.063924238584648186624
W(4) = 0.063114192286254025657
W(5) = 0.062039423159892663904
W(6) = 0.060704439165893880053
W(7) = 0.059114839698395635746
W(8) = 0.057277292100403215705
W(9) = 0.055199503699984162868
W(10) = 0.052890189485193667095
W(11) = 0.05035903553854474948
W(12) = 0.047616658492490474826
W(13) = 0.044674560856694280419
W(14) = 0.041545082943464749214
W(15) = 0.038241351065830706317
W(16) = 0.034777222564770438893
W(17) = 0.031167227832798088902
W(18) = 0.027426509708356948200
W(19) = 0.023570760839324379141
W(20) = 0.019616160457355527814
W(21) = 0.015579315722943848728
W(22) = 0.011477234579234539490
W(23) = 0.007327553901276262102
W(24) = 0.003153346052305838633

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N = 48/2
CSUM = DCMLPX(0.0,0.0)

DO 10 I=1,N
  ZP = (B-A)*X(I)/2 + (B+A)/2
  CSUM = CSUM + W(I)*CFN(ICHOSE,ZP,R)
  X(I) = -X(I)
  ZP = (B-A)*X(I)/2 + (B+A)/2
  CSUM = CSUM + W(I)*CFN(ICHOSE,ZP,R)
CONTINUE

CINT = (B-A)*CSUM/2
RETURN
END

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