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 1: program aula25do02exer04
 2: PARAMETER (NNN = 10000)
 3: real K1, K2, K3, K4
 4: Dimension Y(0:NNN)
 5: open(14,file="KUTTA_vetor-exe04.txt")
 6: open(15,file="erro-exe4.txt")
 7: H = 0.001
 8: NSTEP = 4./H
 9: Y(0) = 10.
10: DO 10 IX = 0, NSTEP-1
11:    X = 1 + IX*H
12:    K1 = H*FUNC((X), (Y(IX)))
13:    K2 = H*FUNC((X + H/2.), (Y(IX) + K1/2.))
14:    K3 = H*FUNC((X + H/2.), (Y(IX) + K2/2.))
15:    K4 = H*FUNC((X + H), (Y(IX) + K3))
16:    Y(IX+1) = Y(IX) + (K1 + 2*K2 + 2*K3 + K4)/6.
17:    DIFF = EXATA(X+H)-Y(IX+1)
18:    erro = abs(DIFF/EXATA(X+H))
19:    write(14,*)X+H,Y(IX+1),EXATA(X+H)
20:    WRITE(15,*)erro
21: 10 CONTINUE
22: end
23:
24: real function FUNC(X,Y)
25:      FUNC = (LOG(X)-Y)/(X+1.)
26: end
27:
28: real function exata(x)
29:      exata = (x*LOG(x)-x+21)/(x+1.)
30: end
```