```
 1: program aula20do02exer03
 2: PARAMETER (NNN = 100000)
 3: Dimension y(0:NNN)
 4: open(14,file="euler3.txt")
 5: open(15,file="erro3.txt")
 6: H = 0.001
 7: NSTEP = 3./H
 8: y(0) = 1.
 9: DO IX = 0, NSTEP-1
10:    X = IX*H
11:    Y(IX+1) = Y(IX) + H*func(X,Y(IX))
12:    DIFF = EXATA(X+H)-Y(IX+1)
13:    erro = abs(DIFF/EXATA(X+H))
14:    write(14,*)X+H,Y(IX+1),EXATA(X+H)
15:    WRITE(15,*)erro
16: enddo
17: end
18:
19: real function func(X,Y)
20:      func = -x*y
21: end
22:
23: real function exata(x)
24:      exata = EXP(-0.5*(X)**2)
25: end
```