```
 1: program raiz
 2: external func
 3: open(15,file="18do02exe11.txt")
 4: call qraiz(func)
 5: end
 6:
 7: subroutine qraiz(func)
 8: implicit real*8(a-h,o-z)
 9: TOLX = 1.d-06
10: X = .1
11: FOLD = func(X)
12: DX = .5
13: ITER = 0
14: 10 continue
15:    ITER = ITER + 1
16:    X = X + DX
17:    write(15,*)ITER, X
18:    if ((FOLD*func(X)) .LT. 0) then
19:       X = X - DX
20:       DX = DX/2
21:    END IF
22:    if (ABS(DX) .GT. TOLX) GOTO 10
23: STOP
24: return
25: end
26:
27: real*8 function func(E)
28: implicit real*8(a-h,o-z)
29: Double Precision Mass
30: parameter(a = 2.0d0, V0 = 10.0d0)
31: parameter(Mass = 1.0d0, h_bar_sq = 7.619968d0)
32: alpha = dsqrt((2.d0*Mass*E)/h_bar_sq)
33: beta = dsqrt((2.d0*Mass*(V0-E))/ h_bar_sq)
34: func = beta*dcos(alpha*a) - alpha*dsin(alpha*a)
35: end
```