

```

1  !Project 1
2
3  PROGRAM goldenmean
4
5  !declarations
6
7
8      IMPLICIT NONE
9      Integer :: m,n
10     Real :: sqrt5, g, phi0, phi1, phi, phina, phinb,phinc
11
12
13     ! define some numbers
14
15     sqrt5=SQRT(5.0)
16     g=(sqrt5-1.0)/2.0
17
18     !initialize iteration, n=1
19
20     phi0=1.0
21     phi1=g
22     phinc=g
23
24     !iteration
25
26     m=100
27     do n=2, m
28
29     !recursion step
30
31         phi=phi0-phi1
32
33     !compare to
34
35         phina=g**n
36         phinb=g**real(n)
37         phinc=g*phinc
38
39     !monitor iteration
40
41         write (*, '(I4,E15.7,2X,3E15.7)') n,phi, phina, phinb, phinc
42
43     !prepare next step
44
45         phi0=phi1
46         phi1=phi
47
48
49     end do
50
51 END PROGRAM
52

```