

```

1  program sample_mean
2      implicit none
3      integer::n,i,j
4      real::x1,x2,y1,y2,x,y,f,area,er
5      open(1,file="result2.dat",status="unknown")
6
7      write(*,*)"Enter lower and Upper x limits respectively:"
8      read(*,*)x1,x2
9      write(*,*)"Enter lower and Upper y limits respectively:"
10     read(*,*)y1,y2
11     n = 5
12     do j = 1,15
13         y = 0
14         do i = 1,n
15             x = (x2-x1)*rand() + x1
16             y = y + f(x)
17         end do
18         area = (x2-x1)*(y/n)
19         er = abs((1.5-area)*100/1.5)
20         write(1,*)n,area,er,"% "
21         n = n*2
22     enddo
23 end program
24
25 real function f(x)
26     implicit none
27     real::x,y
28     if(x <= 1)then
29         y = 1
30     elseif(x > 1) then
31         y = -x + 2
32     end if
33     f = y
34 end function
35
36 !OUTPUT
37 ! Enter lower and Upper x limits respectively:
38 !0
39 !2
40 ! Enter lower and Upper y limits respectively:
41 !0
42 !1
43 !
44 !Process returned 0 (0x0)   execution time : 6.469 s
45 !Press any key to continue.

```