

Program VIIe.2.3. FORTRAN Listing of Fourth-Order Runge – Kutta

```
implicit real*8(a-h,o-z)
data dx,n,nw,xb,yb,eps,NN/0.01,0,0,0.,0.5,1.e-7,30/
write(*,4)
yo = yb + dx * fof(xb,yb)
1  continue
   n = n + 1
   x = xb + dx
   y = yb + (fof(xb,yb)+fof(x,yo))*dx/2.
   if(abs(y-yo)/y.le.eps) go to 2
   if(n.gt.NN) go to 3
   yo = y
   go to 1
2  continue
   nw=nw + 1
   if(nw.eq.10) write(*,5) x,y
   if(nw.eq.10) nw = 0
   n = 0
   xb = x
   yb = y
   if(x.gt.0.6) go to 6
   go to 1
3  continue
   print *, ' Did Not Converge in 30 Tries'
4  format(//,5x,'x',10x,'y')
5  format(f7.4,f12.7)
6  continue
   stop
   end
c
Function fof(x,y)
implicit real*8(a-h,o-z)
fof=x*x+2*y
return
end
```