Program VIIe2.2. FORTRAN Listing of Fourth-Order Runge – Kutta

```
      implicit real*8(a-h,o-z)
      data dx, x, y/0.1, 0.0, 0.5/
      write(*,2)
1     continue
      write(*,3) x, y
      x1  = x + dx/2.
      x2  = x + dx
      ak1 = fof(x,y)
      y1  = y + (dx * ak1/2.)
      ak2 = fof(x1, y1)
      y2  = y + (dx * ak2/2.)
      ak3 = fof(x1,y2)
      y3  = y + (dx * ak3)
      ak4 = fof(x2,y3)
      y = y + (ak1 + 2.*ak2 + 2.*ak3 + ak4)*dx/6.
      x = x + dx
      if(x.lt.0.6) go to 1
2     format(///,3x,'x',13x,'y')
3     format(f5.2,5x,f10.7)
      stop
      end
      Function fof(x,y)
      implicit real*8(a-h,o-z)
      fof = 2 * y + x * x
      return
      end
```