```
function[x1,err,relerr]=newraph3(x0,max1,tol,iter,f,fprime)
x0 = 0.5;
max1=100;
tol=0.00000000005;
iter=1;
f=@(x)exp(-0.5*x)*(4-x)-2;
fprime=@(x)exp(-0.5*x)*((0.5*x)-3);
for i=1:max1
    x1=x0-feval(f,x0)/feval(fprime,x0)
    err=abs(x1-x0);relerr=abs(x1-x0)/x1
    fprintf('%2.0f %10.10f %10.10f %10.10f %10.10f
\n',iter,x0,x1,err,relerr)
    x0=x1,iter=1+iter;
    if err<=tol,break,end
end
```

```
x1 =

      0.83889


relerr =

      0.40397

 1 0.5000000000 0.8388906060 0.3388906060 0.4039747300

x0 =

      0.83889


x1 =

      0.88496


relerr =

     0.052054

 2 0.8388906060 0.8849560003 0.0460653942 0.0520538809

x0 =

      0.88496


x1 =

      0.88571
```

```
relerr =

   0.00084972

 3 0.8849560003 0.8857086050 0.0007526047 0.0008497204

x0 =

      0.88571


x1 =

      0.88571


relerr =

   2.2247e-07

 4 0.8857086050 0.8857088020 0.0000001970 0.0000002225

x0 =

      0.88571


x1 =

      0.88571


relerr =

   1.5293e-14

 5 0.8857088020 0.8857088020 0.0000000000 0.0000000000

x0 =

      0.88571


ans =

      0.88571
```

Published with MATLAB® R2018a