```
import numpy as np

i=1.5

w_o=0.8

y=0.5

r=0.01

def dc_dw(a,y,i):

  dc_da=2*(a-y)

  da_dw=i

  return dc_da*da_dw

w=[w_o]

a=[w_o*i]

for j in range(0,100):

  a.append(w[-1]*i)

  w.append(w[-1]-r*dc_dw(a[-1],y,i))

  if(a[-1]-y)**2<0.001:

    break

print(a)

print(" ")

print(w)
```

```
[1.2000000000000002, 1.2000000000000002, 1.1685, 1.1384175, 1.1096887125000001, 1.082252
[0.8, 0.779, 0.758945, 0.739792475, 0.721501813625, 0.704034232011875, 0.687352691571340
```

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