In [9]:
```
import numpy as np
import math
import matplotlib.pyplot as plt
%matplotlib inline
```

In [10]:
```
print ("Layer 1")
X1 = np.array ([1, 2.00, 0.26])

# Layer 2
print ("Layer2")
print ("X1 =", X1)
W12 = np.array ([[12.70, -.20, -.74, -.19],
                 [-1.49, -8.85, 7.08, -8.29],
                 [-19.85, -2.61, -3.59, -2.70]])
W12
print ("W12 =")
print (W12)
Y2 = X1.dot(W12)
print ("Y2 =", Y2)
A2 =1/(1+np.exp(-Y2))
print ("A2 =", A2)
```

```
Layer 1
Layer2
('X1 =', array([ 1.  ,  2.  ,  0.26]))
W12 =
[[ 12.7   -0.2   -0.74  -0.19]
 [ -1.49  -8.85   7.08  -8.29]
 [-19.85  -2.61  -3.59  -2.7 ]]
('Y2 =', array([  4.559 , -18.5786,  12.4866, -17.472 ]))
('A2 =', array([  9.89636011e-01,   8.53918721e-09,   9.99996223e-01,
         2.58230063e-08]))
```

In [11]:
```
# Layer 3
print ("Layer3")

print ("A2 =", A2)
W23 = np.array ([7.44,2.78,-4.31,-2.70])
print ("W23 =")
print (W23)
Y3 = A2.dot(W23)
print ("Y3 =", Y3)
h =1/(1+np.exp(-Y3))
print ("h(x) =", h)
error = 1-h
print ("e = ", error)
```

```
Layer3
('A2 =', array([  9.89636011e-01,   8.53918721e-09,   9.99996223e-01,
         2.58230063e-08]))
W23 =
[ 7.44  2.78 -4.31 -2.7 ]
('Y3 =', 3.0529081536969604)
('h(x) =', 0.95490791388756113)
('e = ', 0.045092086112438867)
```

In [ ]: