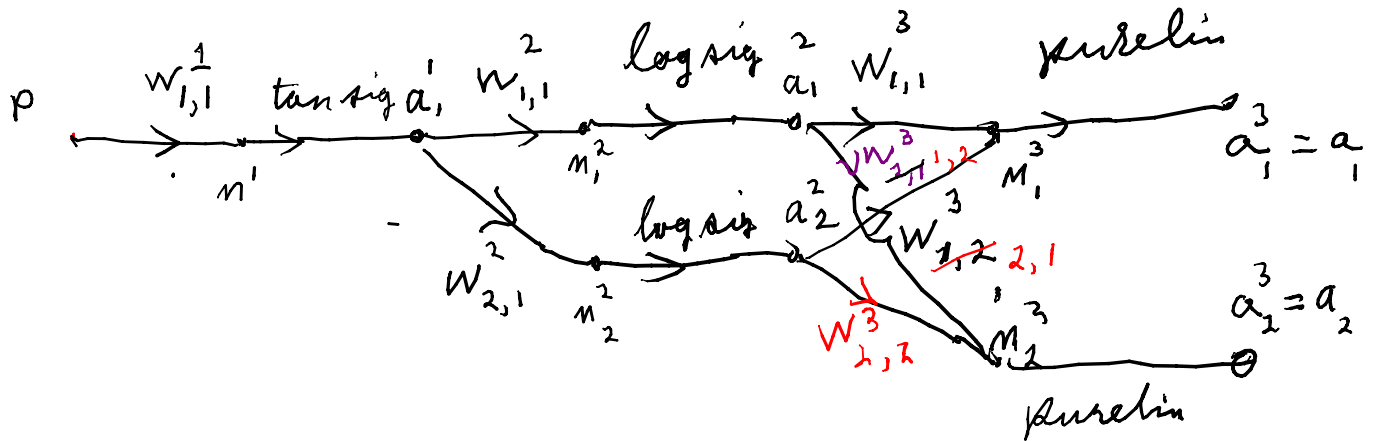


EE434
02/15/05



```
net1=newff([-2 2],[1 2 2], {'tansig' 'logsig' 'purelin'})
find first set of weights by running sim(net1,P)
net1.IW{1,1}a=0.700, net1.b{1}a=0 subscript a means first pass through
net1.LW{2,1}a=[-5.6000 5.6000]'
net1.b{2}a=[-5.6000 5.6000]'
net1.LW{3,2}a=[-0.0280 0.5242; 0.7826 -0.0871]
net1.b{3}a=[-0.9630 0.6428]'
```

P=0.3, T=[-0.5 4]' gives Ya=[-0.4671 1.3293]'
 see p. 11-25 T-Ya=Ea=[-0.0329 2.6707]'
 n1a=0.2100, a1a=tansig(n1a)=0.270, n2a=(net1.LW{2,1})^{*}a1a+net1.b{2}a=[4.4410 6.7590]'
 a2a=logsig(n2a)=[0.9884 0.9988]'
 n3a=(net1.LW{3,2})^{*}a2a+net1.b{3}a =[-0.4671 1.3293]',

next find sensitivities

$$\Delta^M = -2 \dot{F}^M (M^M) (T - Y_a), \quad M=3$$

here \dot{F} = identity as derivatives of purelin

$$\Delta^M = 2 I_2 \cdot E_a = -2 (T - Y_a)$$

$$\Delta^2 = \dot{F}^2 (M^2) \cdot W^{3T} \Delta^3$$

$$\Delta 2a = F 2a \cdot (\text{net.LW}\{3,2\})^T \Delta 3a$$

s3a=-2(T-Ya)Ea=[0.0658 -5.3413]'
s2a=F2a*(net1.LW{3,2})'*s3a=[-0.0481 0.0006]'