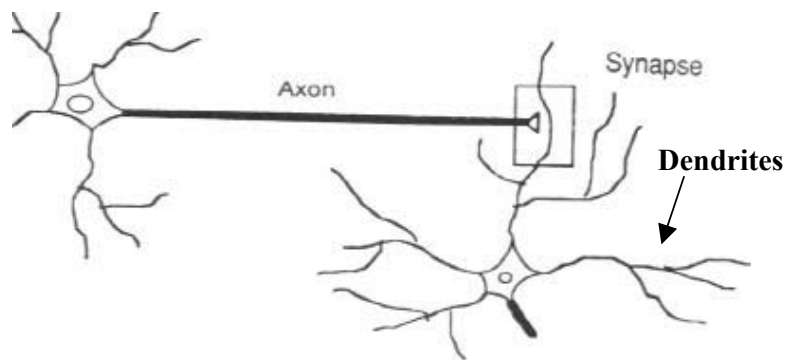Figure 1: Components of a neuron
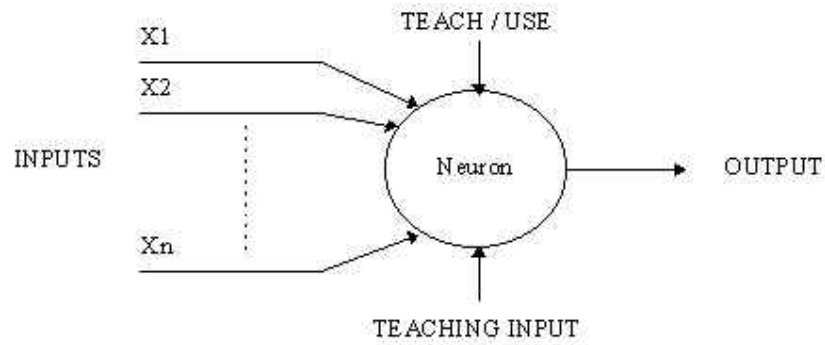

Figure 2: The synapse

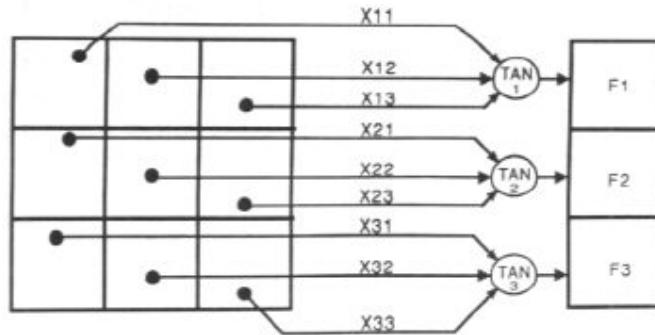Figure 3: A simple neuron

Figure 4: A feed-forward neural network
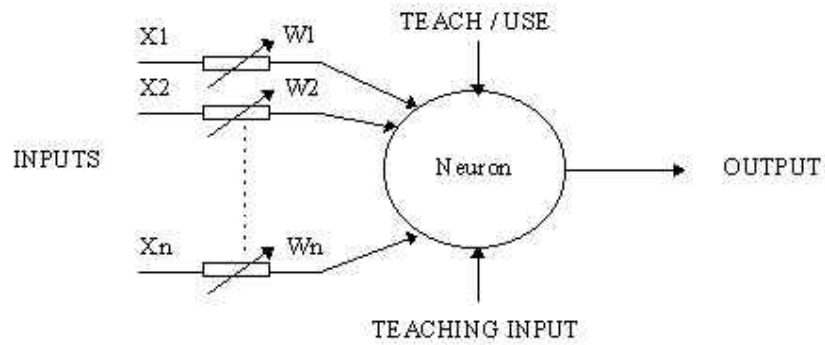
Figure 5: An MCP neuron

Figure 6: A perceptron

Incoming Neural Activations (A_i)
Multiplied by Individual
Connection
Weights (W_{ij})

Output Activation (A_j) Multiplied by
Individual Connection Weights W_{jk}
Sent to other Neurons

$W_{1j} A_1$

Activation (output) of Neuron j

$W_j A$

$W_{2j} A_2$

$W_{jk} A_j$

$$A_j = f \left[\sum_{i=1}^{N} W_{ij} A_i + \theta_j \right]$$

$W_{Nj} A_N$

$W_{jM} A_j$

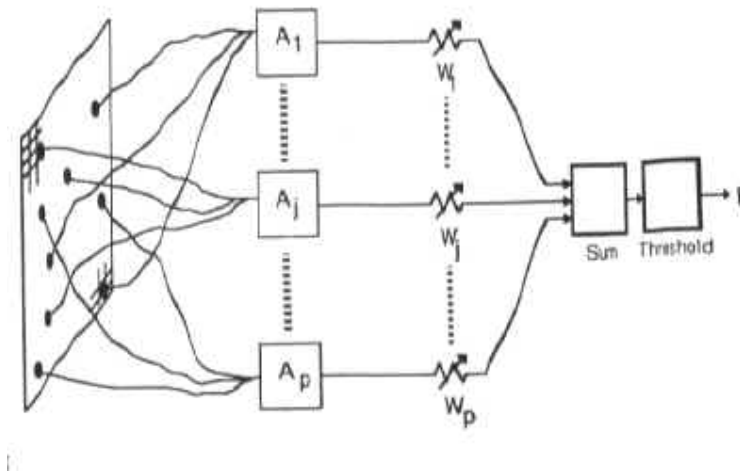Figure 7: A learning rule for changing the values of the weights

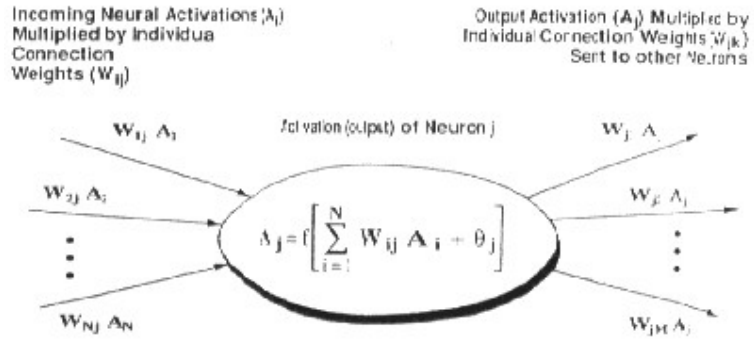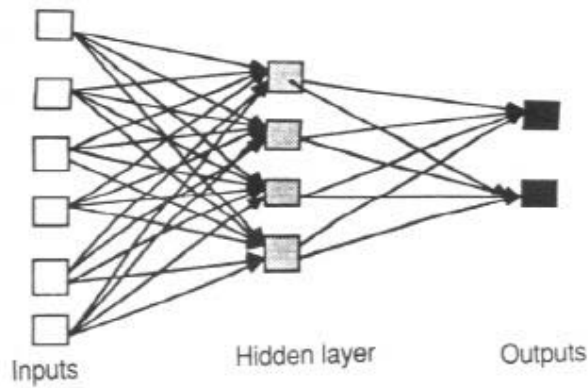Inputs   Hidden layer   Outputs

Figure 8: An example of a simple feed-forward system