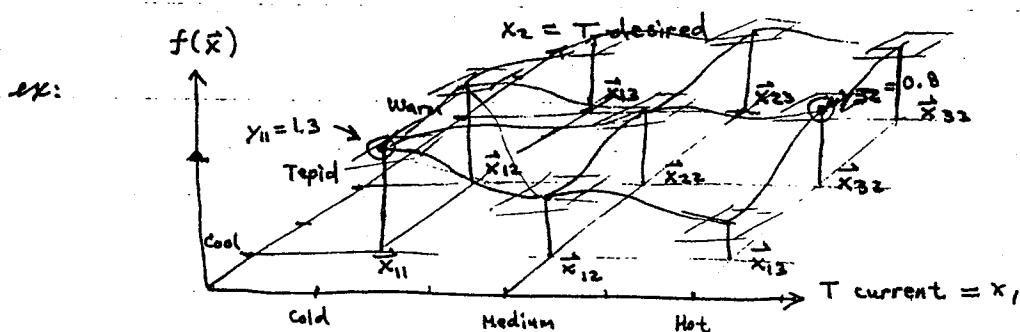Neil E Cotter
12 Mar 1994

tool:   The slope or derivative of the centroid
        function is zero when membership $m_{ij}$
        is equal to 1. This occurs when the
        input data $\vec{x}$ lies at grid point $x_{ij}$.
        Thus, the network output is $f(\vec{x}) = y_{ij}$
        and the derivative of $f(\vec{x})$ at $\vec{x} = x_{ij}$
        is zero.  In other words, $f(\vec{x})$ is
        flat (horizontal) at the grid points
        where output values $y_{ij}$ are specified.

ex:



observe:   Between $\vec{x}_{ij}$ grid points, $f(\vec{x})$ is continuous
           and (mostly) smooth (differentiable).