

[Jingze Li, RUID 195000313]

EM

Hw21.4

Below is the plot of Neural network with a 2,3,4,5 layers, random weight matrix, with entry range $[-5, 5]$. It is interesting to note that the the graph remains identical with different c_1, c_2 .

We can see that they are mainly piecewise linear functions, with some strange behavior on the edge.

We hope that with different choice of weight matrix, we can form a base of the function space, which will be the theoretical evidence of the good approximation ability of the neural network.

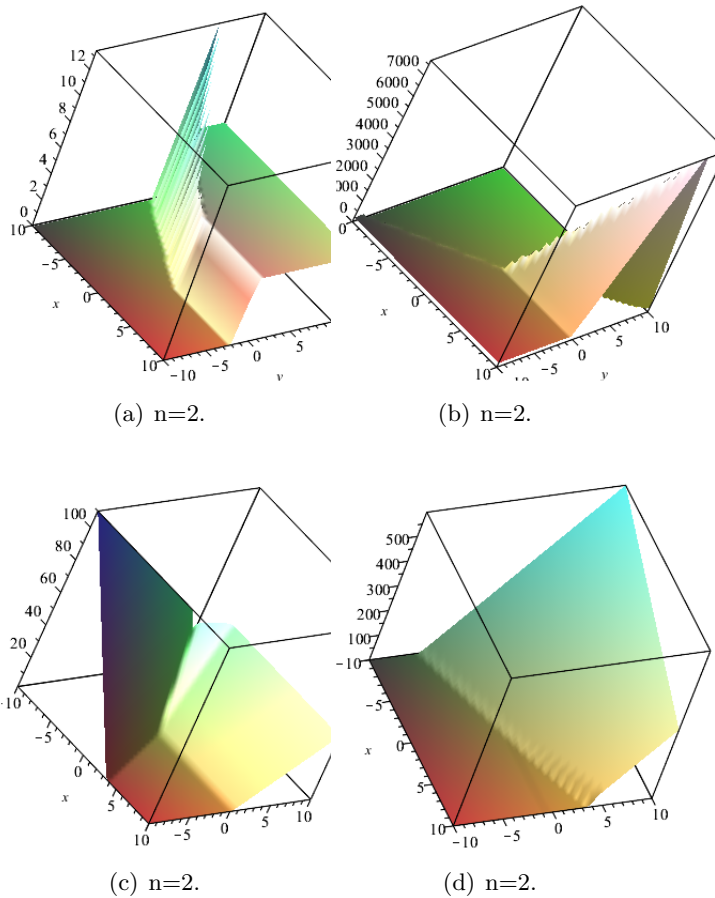
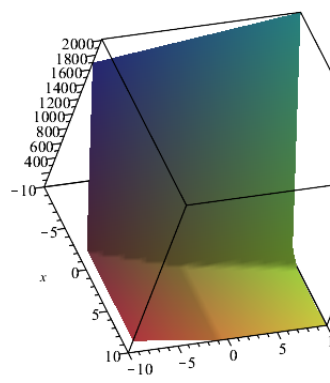
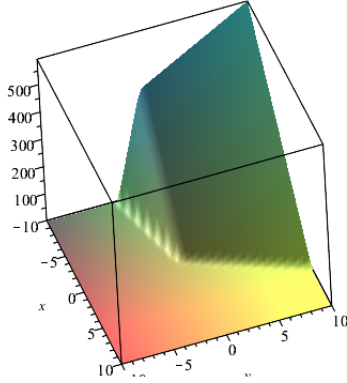


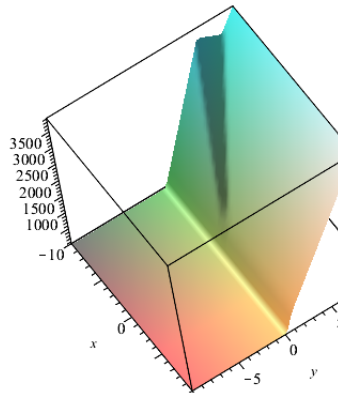
Figure 1: pics



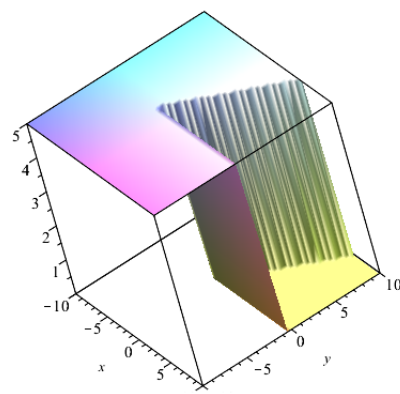
(a) $n=3$.



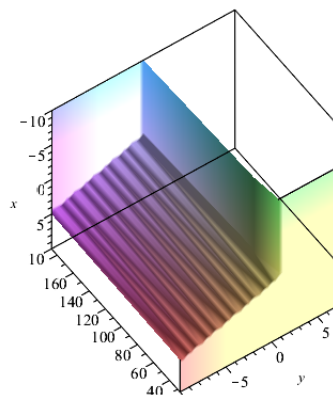
(b) $n=3$.



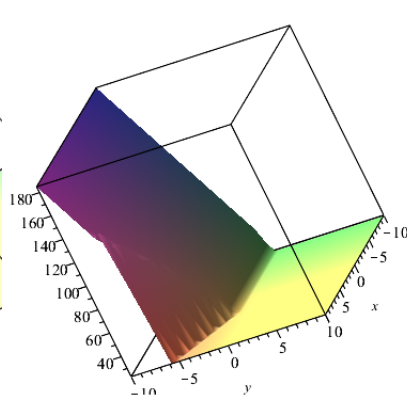
(c) $n=4$.



(d) $n=4$.



(e) $n=5$.



(f) $n=5$.

Figure 2: pics