

CS151 - Written Problem 8
To be done by: Monday, Oct. 22

1. In class, I put up the following truth table:

x_1	x_2	x_3	$f(x_1, x_2, x_3)$
0	0	0	1
0	1	0	0
1	0	0	1
1	1	0	0
0	0	1	1
0	1	1	1
1	0	1	1
1	1	1	0

Could we model this function perfectly with a perceptron? If not, change the label of one of the cases to make it possible. If so, change the label of one of the cases to make it impossible.

2. We looked at one way of doing the XOR with a multi-layer feedforward network in class involving three neurons. Design a neural network that calculate the XOR of two inputs using only two neurons (*Hint*: you may have to pass the inputs to both neurons.).
3. Exercise 8.9 [a–b] (a little FOL never hurt anyone...)