**Homework 6**

1.

For the given circuit, there are 2 single input gates, 5 dual input gates and 1 triple input gates. That gives us 2\*(1+1) + 5\*(2+1) + 1\*(3+1) = 23 total fault sites. This means there are (2^23) – 1= 8388607 total fault combinations. The total number of single faults to consider is 46.



This is the line oriented fault collapsed model for this circuit.

2.

For m-sa1, we want a test vector that will force a correctly working circuit m to 0, and yet show one on the output:



The above vector cannot produce a true value on Y unless there is a fault.

For p-sa0, We can back track a similar solution.



In this case, the above vector will produce a 1 on W when there should not be.

The assumption with both of the above fault traces is that there are no other faults. If there are multiple faults, we would have to design a different way to test.