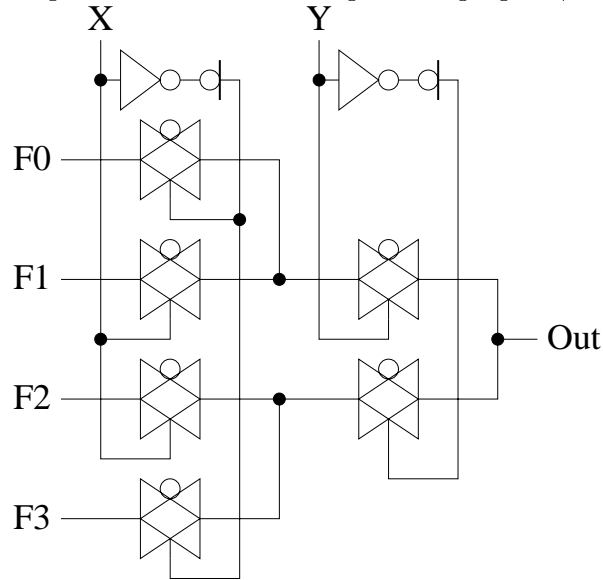


Logical Unit

A designer bungled this pass-gate implementation of a generic logic gate (4 to 1 mux).



Remember that pass-gates are ideal switches that close when the control signal is high, and open when the control signal is low. We'll ignore the complemented control signal here.

Part A Determine which input is passed to the output under the following control conditions. Complete the left-hand table below.

Part B Using this pass-gate tree, what are the function inputs (F_0, F_1, F_2, F_3) for the logical functions listed in the right-hand table below?

Y	X	Out
0	0	
0	1	
1	0	
1	1	

function	F_3	F_2	F_1	F_0
AND				
XOR				
\bar{X}				
$X + \bar{Y}$				