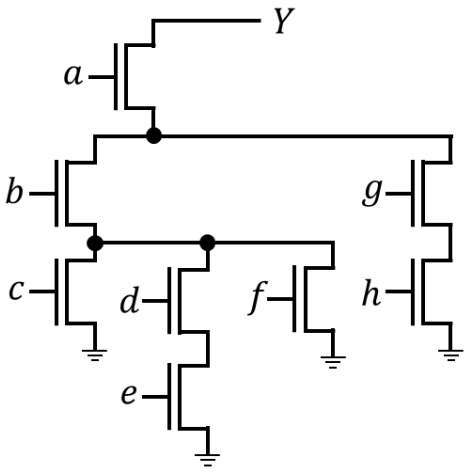
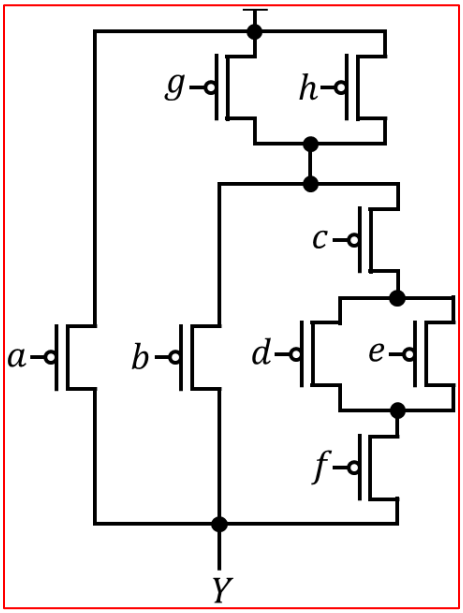
Homework Assignment 2
(Due Feb. 1st at the beginning of the class)

(1) **[Static CMOS Gates, 10 points]** Y is a Boolean function of eight variables (a, b, c, d, e, f, g, h). The nFET network of Y is shown below. Express Y as a function of the variables. Available inputs: a, b, c, d, e, f, g, h.



$$\boldsymbol{Y = \overline{a \cdot (b \cdot (c + d \cdot e + f) + g \cdot h)}}$$

(2) **[Static CMOS Gates, 10 points]** Draw a transistor-level schematic for the pFET network of Y shown in Problem 1. Available inputs: a, b, c, d, e, f, g, h.



(3) **[Static CMOS Gates, 10 points]** Draw a ***gate-level*** schematic for a ten-input AND gate using only two-input NAND and two-input NOR gates. Available inputs: $x_1, x_2, \ldots, x_{10}$.