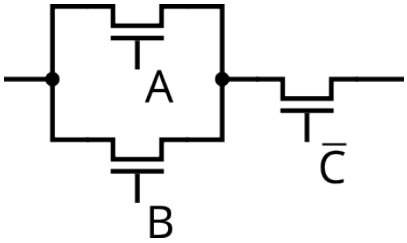
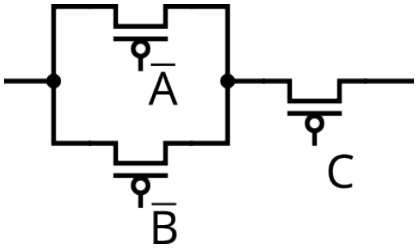
a) Design a switch network using only N-FETs that creates a connection when either (or both) of inputs A or B is high, but only if input C is low. Label FET gates with complemented input signals if needed.

Expression: $connect = (A + B) \cdot \overline{C}$




b) Design another switch network using only P-FETs that creates a connection under the same conditions as the network in part a.

Same expression, but control signals need to be inverted.




c) Design another switch network using only P-FETs that creates a connection under the opposite conditions as the network in part a.

Expression: $connect = \overline{A} \cdot \overline{B} + C$

And since it's being created with P-FETs, control signals need to be inverted.