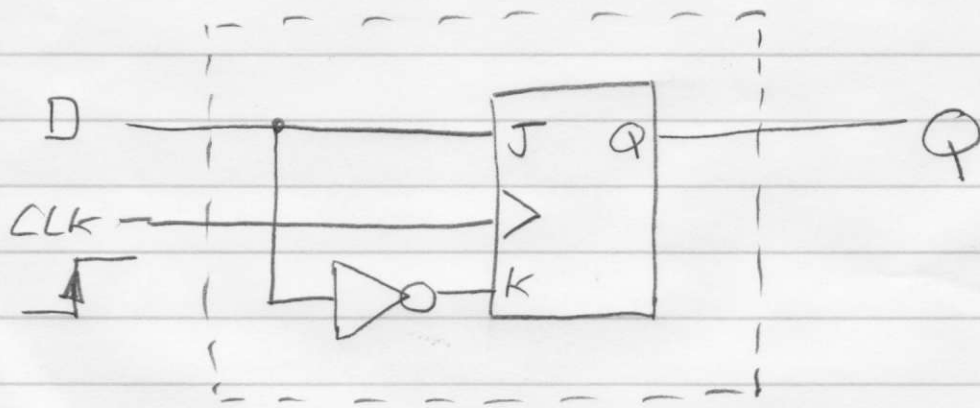


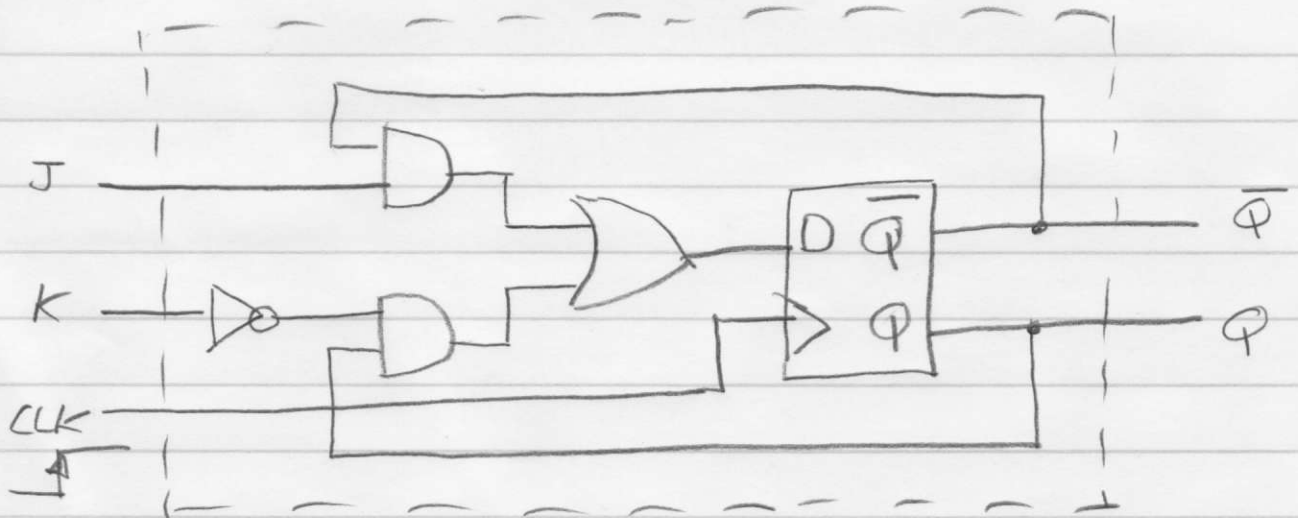
PHYSICS 335 - SPRING QUARTER 2013

HOMWORK 2 - SOLUTIONS VI.2 (FIXED ERROR IN PROBLEM 1)

1. D-LATCH FROM J/K FLIP-FLOP.
YOU'LL SEE THIS IN LAB# 2.



2. J/K FLIP-FLOP FROM D-LATCH.
THIS IS SURPRISINGLY TRICKY.

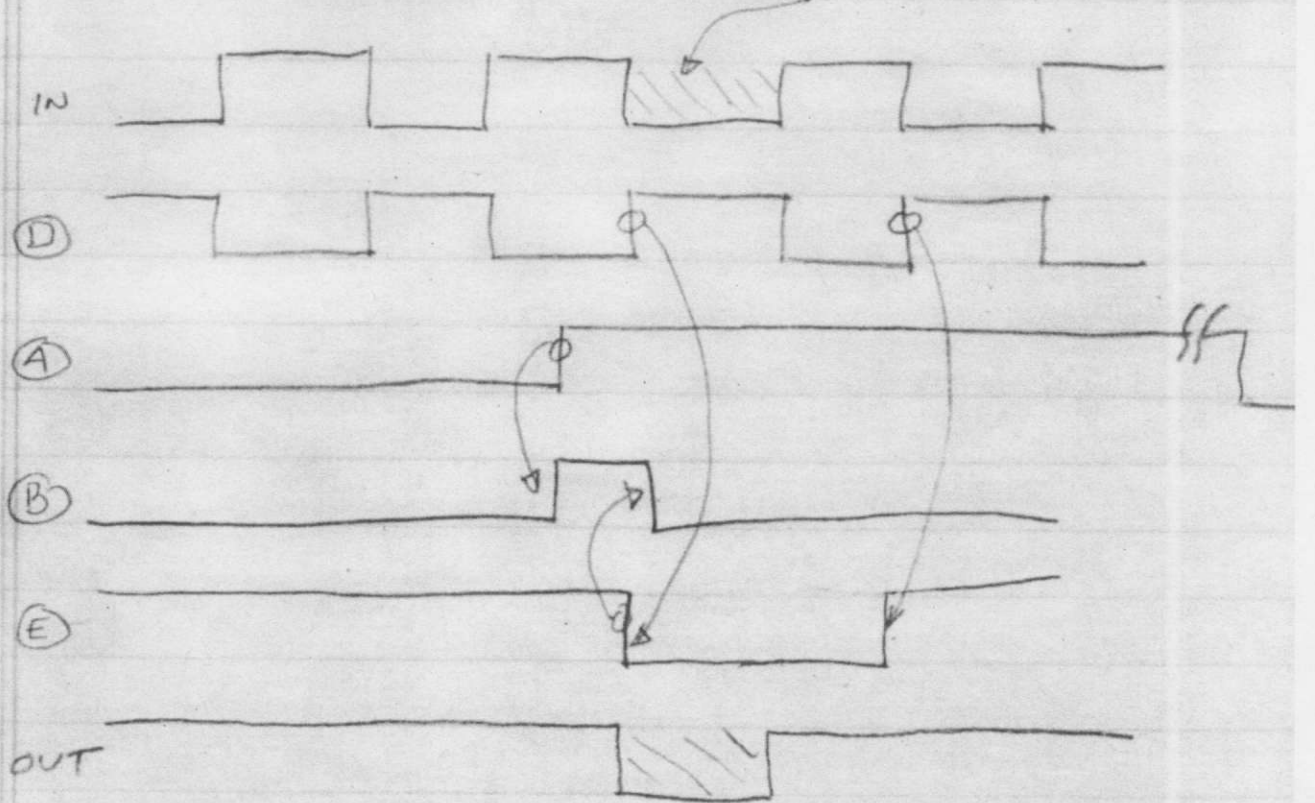
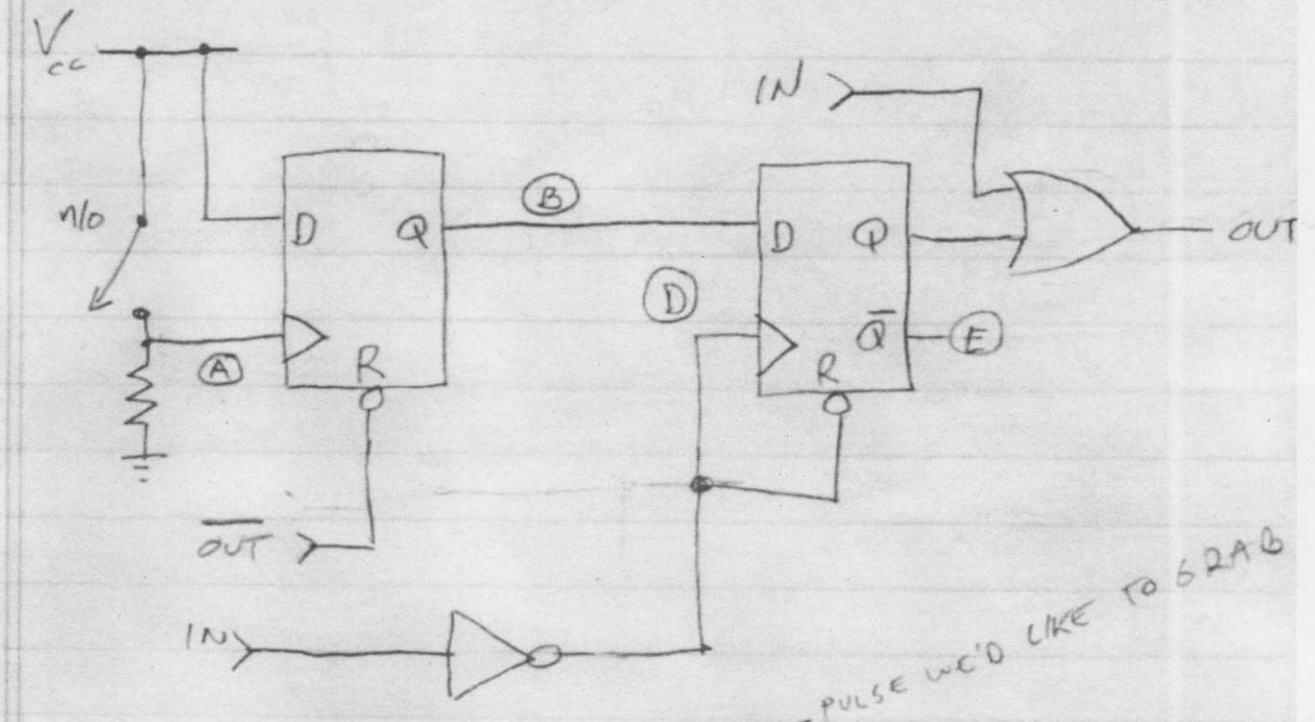


YOU MAY NOTICE THIS IS THE CIRCUIT
EQUIVALENT OF

$$Q_{n+1} = J \cdot Q_n + \overline{K} \cdot Q_n$$

SATISFY YOURSELF THIS IS THE
BOOLEAN EXPRESSION FOR A J/K F.F.

3. "NEGATIVE-PULSE GRABBER". HERE'S ONE OF THE INFINITE WAYS TO DO IT.



THOUGHT QUESTION: WHAT WOULD "OUT" LOOK LIKE WITHOUT THE "OR" GATE?