

## HW6

## 1. Combinational Logic Practice

• Shift Left Logical, SLL

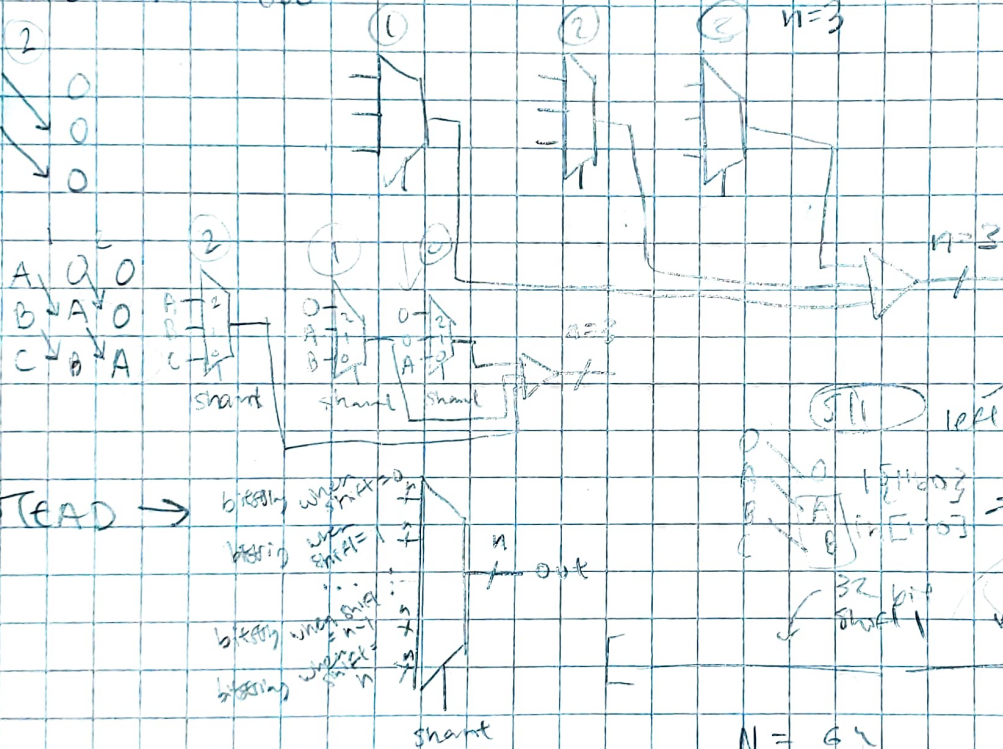
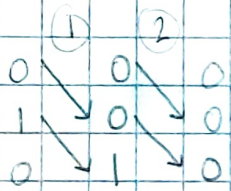
- Takes input, shifts it left by shamt (Shift Amount). This is also how you multiply numbers by powers of two.

shamt = 1

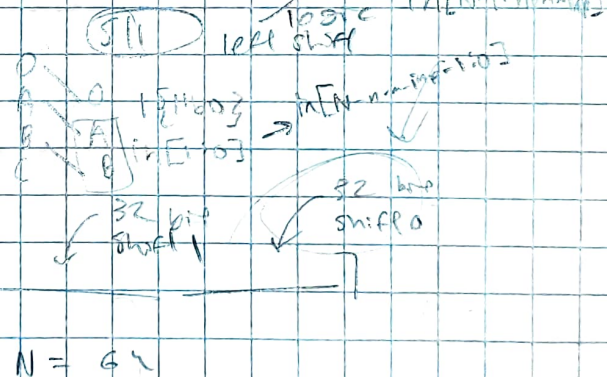
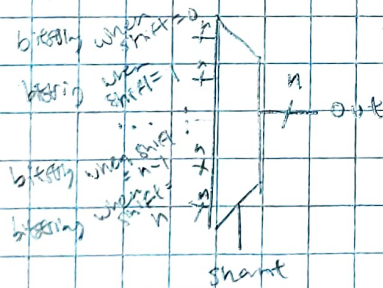
001  $\xrightarrow{1}$  010  $\xrightarrow{2}$  100  $\xrightarrow{3}$  000

int[2:0] 011  $\rightarrow$  110  $\rightarrow$  100  $\rightarrow$  000

bit length n  
muxes



INSTEAD  $\rightarrow$



## 2. Parallel to Serial Practice

MSB - FIRST

101010  $\rightarrow$  010101  $\rightarrow$  001000  $\rightarrow$  010000  $\rightarrow$  000000  $\rightarrow$  000000

LSB - FIRST

101010  $\rightarrow$  010101  $\rightarrow$  001010  $\rightarrow$  000101  $\rightarrow$  000010  $\rightarrow$  000001