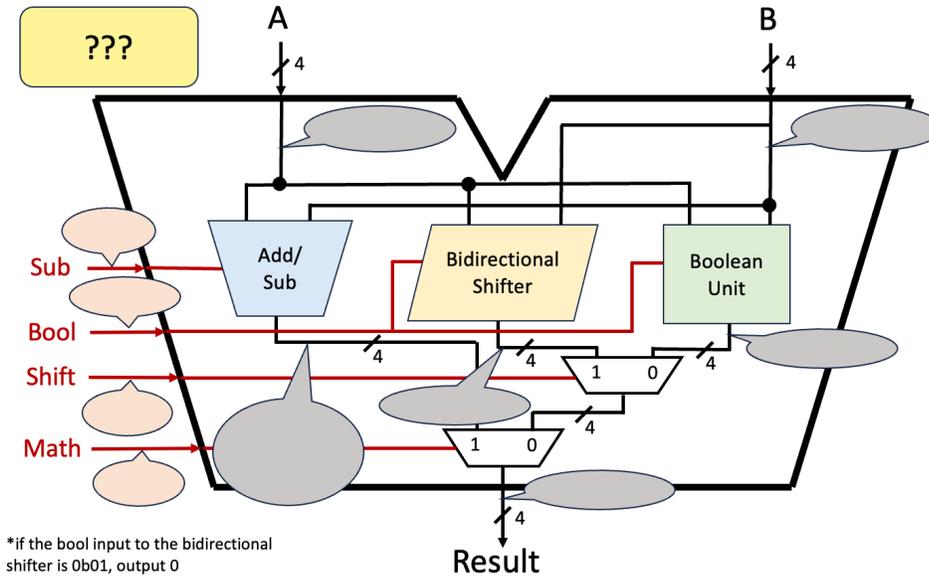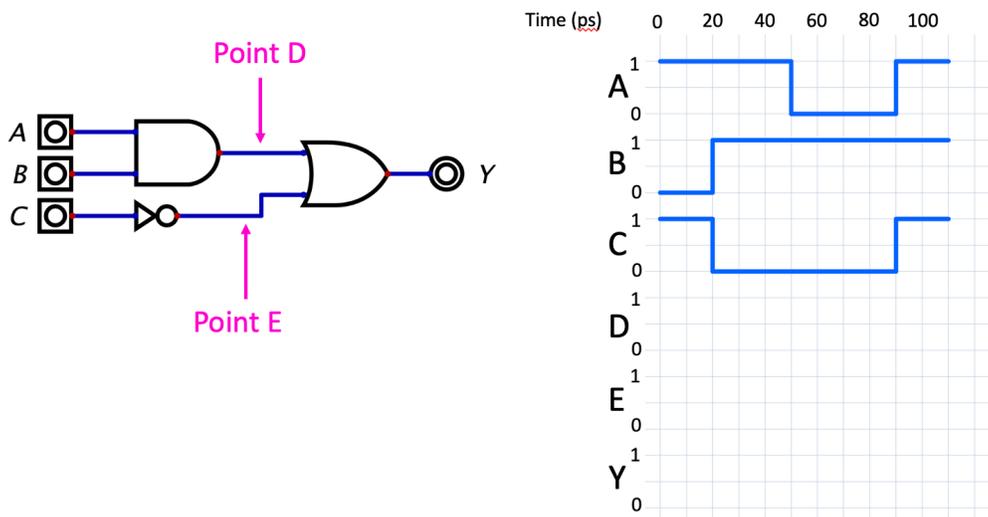**Question 1: ALU Shift**   For an instruction of your choosing, trace through the ALU and show:
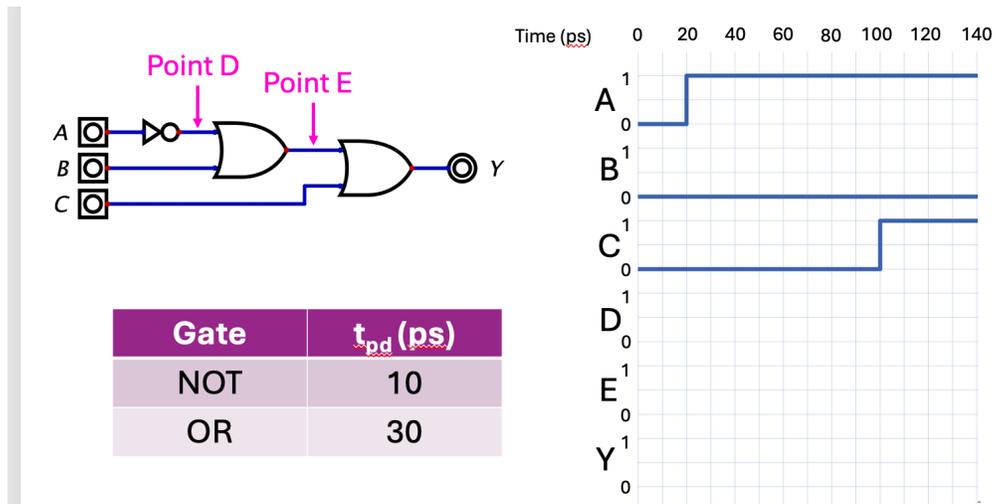
1. Which unit's output is selected by the control signals into the result (Add/Sub, Bidirectional Shifter, Boolean Unit).
2. What the control signal setting must be (Math, Shift, Bool, or Sub).
3. The intermediate input/output values at each stage.
4. The final 4-bit Result produced.

Question 2: Waveform Practice   Fill in the waveform diagram, for the intermediate points and the result Y.

Question 3: Propagation Delay Practice Fill in the waveform diagram, for the intermediate points and the result Y.

Gate	t_{pd} (ps)
NOT	10
OR	30

Question 4: Flip Flop Practice Fill in the waveform diagram for the D Flip-Flop Q. Assume Q starts at 0.