4COM2003.circ-T02L1e04

You are given a design board with two input pins A and B and three output pins R, C.out and V. Build from gates a 6-bit signed-number subtractor circuit, which subtracts B from A asserting the difference on R and the carry-out on C.out. If subtraction causes a signed-number overflow, your circuit must assert 1 on V, otherwise V should be low.

You may use — and combine — any of the circuits you have already built as the basis for this, but you may not use any of Logisim's built-in arithmetic devices to solve this problem. Use the Logisim template `4COM2003.circ-T02L1e04.circ` attached as a starting point for your circuit. A one-bit full full adder is provided with the design board for your convenience.

How to submit your work

Do not move any of the input and output pins, since Logisim connects the test circuit to them based on their position rather than name (which is quite unfortunate, but cannot be helped)

Test the circuit by pressing on input pins with the hand control and recording your observations. When you are certain that the circuit works, reply to this message with the circuit file of your solution (and only the circuit file of your solution) in attachment. Do not change the subject line; make sure that the ticket number in it (i.e. the part that begins with **) is intact.