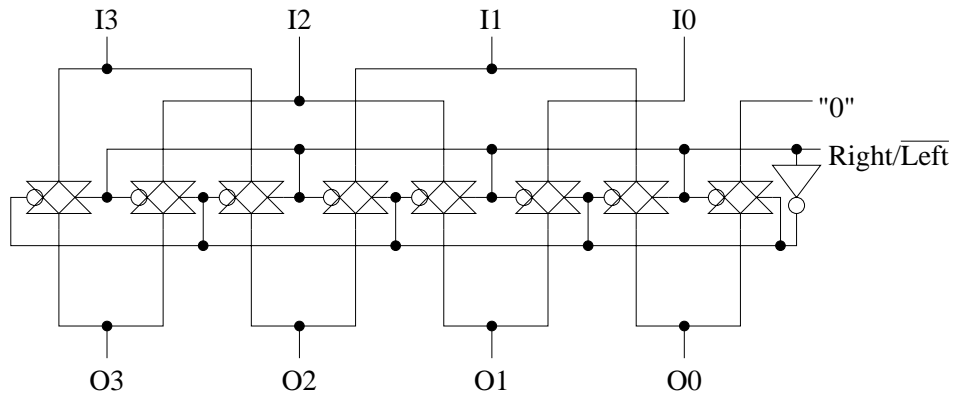


### Shift Unit

**Part A** Design a four bit arithmetic shifter that can shift one bit left or right using only pass gates and one inverter. You only need to connect to the active high side of each pass gate.



**Part B** Using the inputs and outputs of the shift unit in part A, design logic which produces an error signal when shifting four bit two's complement numbers. The output of this logic *Error* is high when an error results from the shift. Note: rounding fractional number is not an error.

