

## HW4-2

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1. (10%) Design a 3- $\rightarrow$ 8 decoder using only NOR and NOT gates.
2. (10%) Design a 4- $\rightarrow$ 2 priority encoder with input  $D[3:0]$  and output  $A[1:0]$  where  $D_0$  has the highest priority and  $D_3$  has the lowest priority.
3. (20%) Design a three-way magnitude comparator that outputs true if its three inputs are in strict order:  $a < b < c$ .  $a$ ,  $b$ , and  $c$  are all three-bit signed 2's complement numbers.