Week 3 Review

Question #1

a) How do you write the number 78 as an 8-bit binary number?

b) What is the two's complement of `01101101`?

`10010011`

c) What is the sum of `01101101` and `01101101`?

`11011010`

Note what's happening here!

Question #2

- What groupings are in the K-map on the right?

	$\overline{C}\cdot\overline{D}$	$C\cdot\overline{D}$	$C\cdot D$	$\overline{C}\cdot D$
$\overline{A}\cdot\overline{B}$	1	1	X	1
$A\cdot\overline{B}$	X	0	X	1
$A\cdot B$	1	X	X	1
$\overline{A}\cdot B$	1	X	0	X

- What logic equations do these groupings represent?

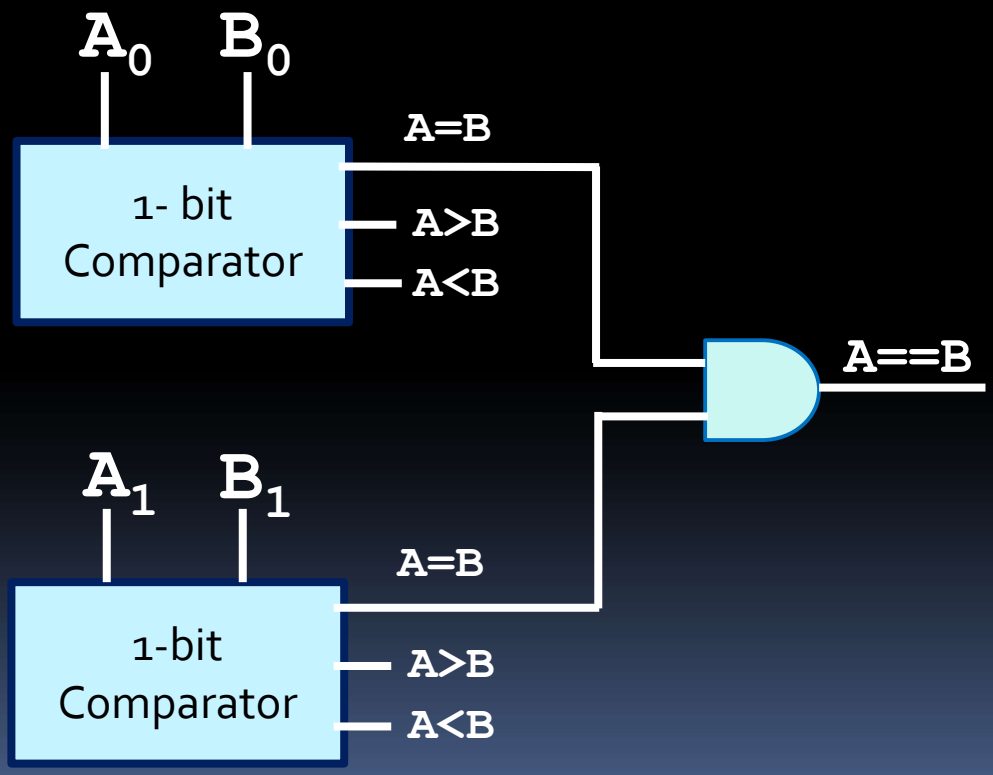
$$\overline{A}\cdot\overline{B} + \overline{C}$$

Question #3

- How would you implement the A>B output of the 2-bit comparator below out of 1-bit comparators and a minimal number of gates?

Question #3

- Consider the implementation of the A==B signal:



Question #3

- The A>B signal follows the same idea: