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COSC 2331-01

1 $(A + B)(CA + B) = CA \cdot A + BA + CAB + BB$

$= AC + AB + ABC + B$

$= AC + B(A + AC + 1)$

$= AC + B(A(1 + C) + 1)$

$= AC + B(A + 1)$

$\boxed{= AC + B}$

2. $\bar{A}B + \bar{B}\bar{C} + AB + \bar{B}C = B(A + \bar{A}) + \bar{B}(C + \bar{C})$

$= B(1) + \bar{B}(1)$

$= B + \bar{B}$

$= \boxed{1}$

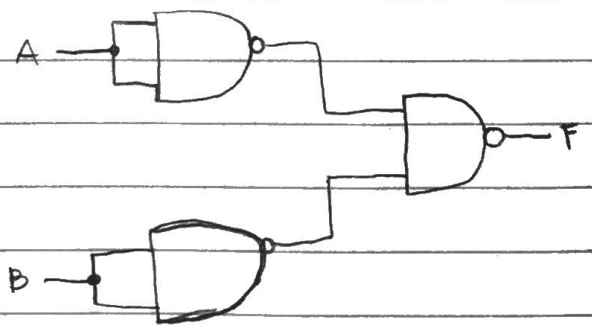
3. $(\bar{A} + B)(A + B) = A\bar{A} + \bar{A}B + BA + BB$

$= 0 + B(A + \bar{A}) + B$

$= B(1) + B$

$= B + B = \boxed{B}$

4.



A	B	OR	$NAND_A$	$NAND_B$	$NAND_F$
0	0	0	1	1	0
0	1	1	1	0	1
1	0	1	0	1	1
1	1	1	0	0	1

5.

A	C	$\bar{A}$	$\bar{C}$	$\bar{A}C$	$A\bar{C}$
0	0	1	1	0	0
0	1	1	0	1	0
1	0	0	1	0	1
1	1	0	0	0	0

No, they are not the same.