CSC322 Assignment1

Ru Ou

V00835123

2. Let A, B and C be three variables.

Assume 



Hence, the nand operator ⊼ is non-associative.



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | y |  |  |  |  |  |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 |



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1111 0000 1010 0011 | | | | | | | | | | | | | | | |
| 11001101 | | | | | | | | 11000001  00001100z | | | | | | | |
| 1010 | | | | 1011  0001y | | | | 0010 | | | | 0010  0000y | | | |
| 11 | | 00  11x | | 00 | | 01  01x | | 01 | | 00  01x | | 00 | | 00  00x | |
| 1 | 1  0w | 1 | 1  0w | 0 | 0  0w | 0 | 1  1w | 0 | 1  1w | 0 | 1  1w | 0 | 0  0w | 0 | 0  0w |
| 1 | | 1 | | 0 | | w | | w | | w | | 0 | | 0 | |
| 1+x | | | | wx | | | | w+wx | | | | 0 | | | |
| 1+x+wxy | | | | | | | | w+wx | | | | | | | |
| 1+x+wxy+wz+wxz | | | | | | | | | | | | | | | |

1. a) if f(x1..0..x4)=1 than f(x1..1..x4)=1

So f is monotone.

b)

0010

0011

0110

0111

1010

1011

1110

1111

1100

1101

x3

x1x2

