Homework 3

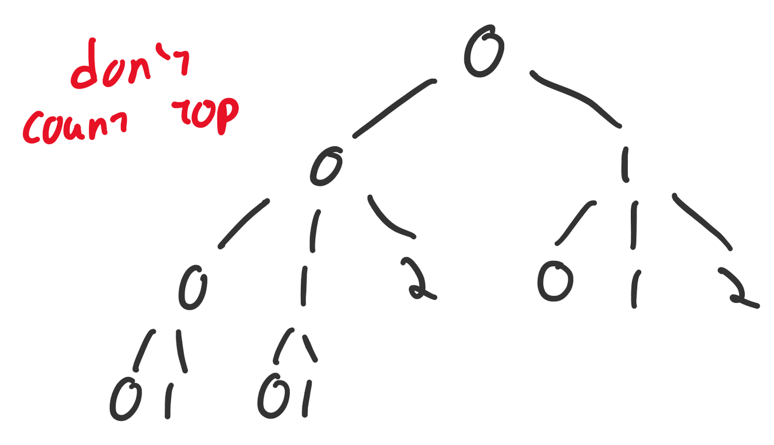
Wednesday, March 6, 2024 4:37 PM

[0, 1] [0, 1] [ ]

Box 1	Box 2	Box 3
0	0	0
0	1	0
1	0	0
1	1	0
0	0	1
0	1	1
1	0	1
1	1	1

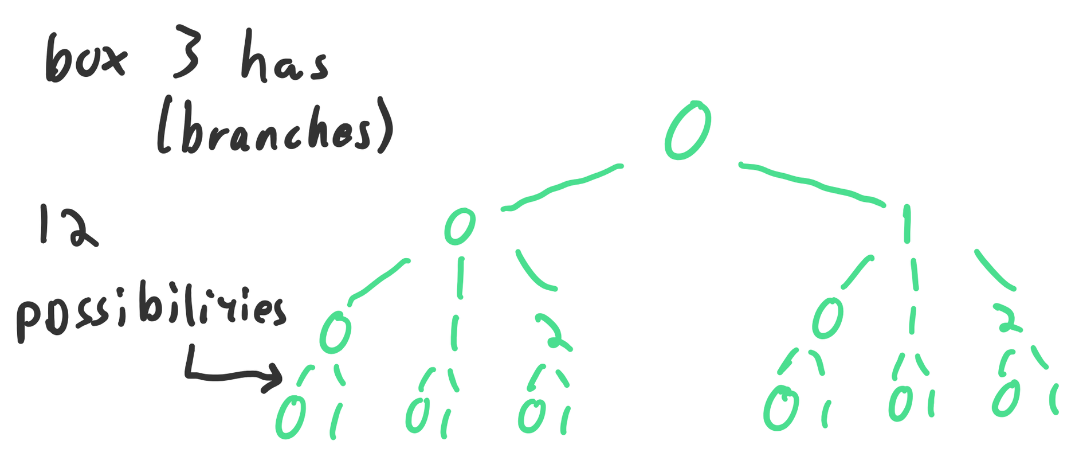
B1 B2

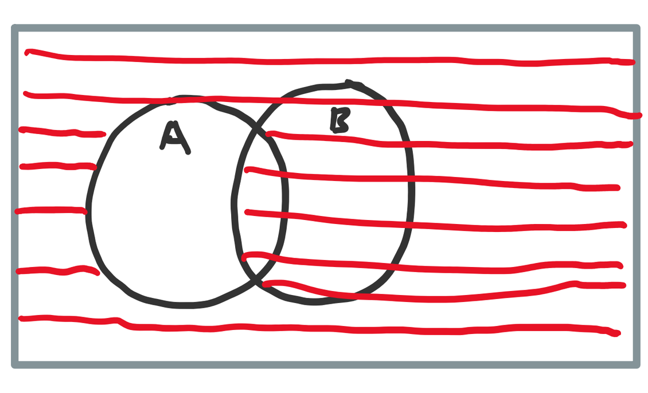
[0, 1] [0, 1, 2] [0, 1]



Box 1 has 2 possibilities

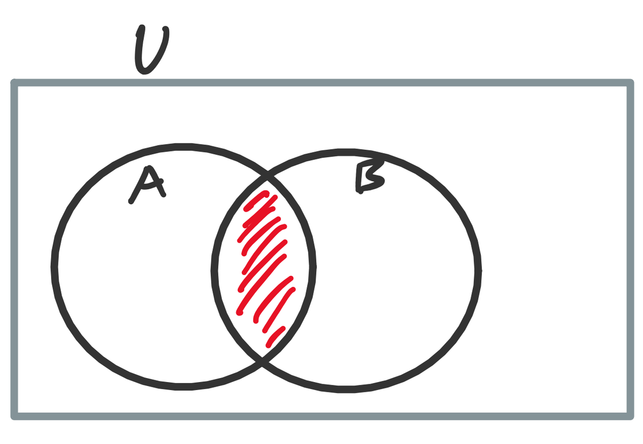
" 2 " 3 "



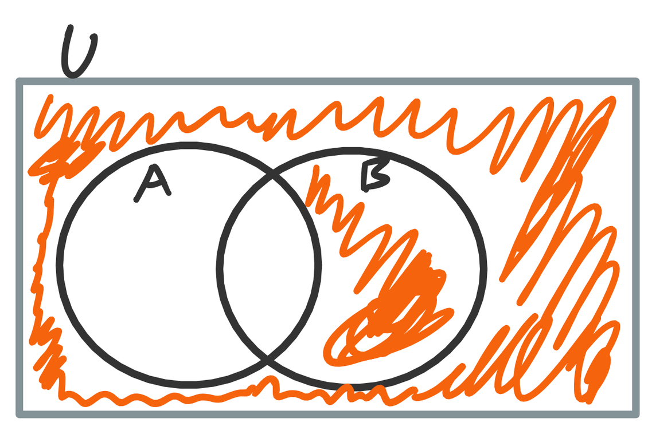


$\overline{AB} \stackrel{?}{=} \bar{A}\,\bar{B}$ AB not?

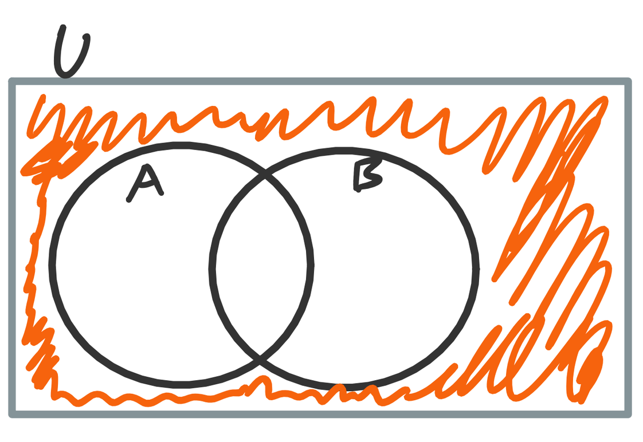
U = universe



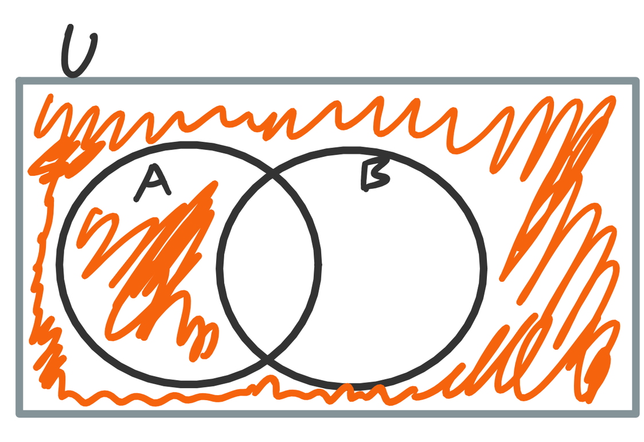
$\bar{A}$ =



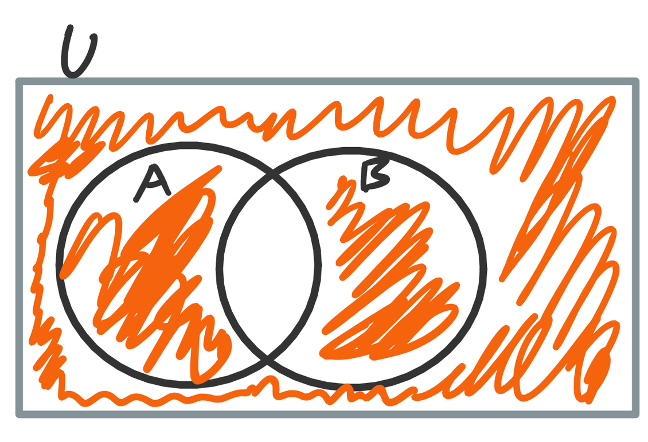
$\bar{A}\bar{B}$ =



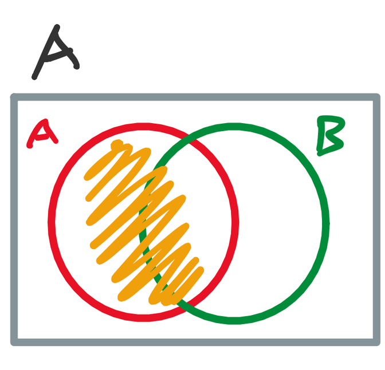
$\bar{B}$ =



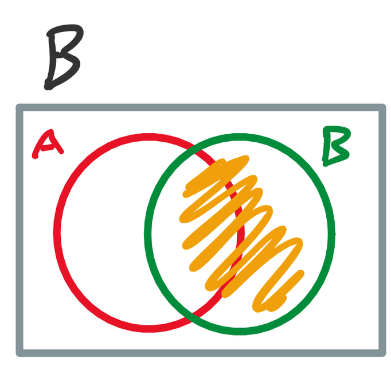
$\bar{A}+\bar{B}$



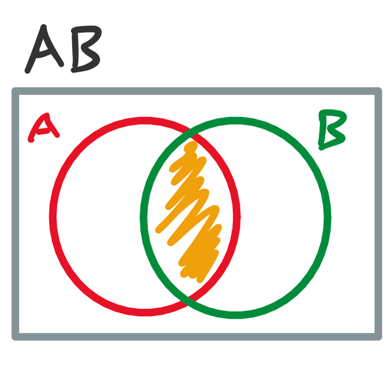
A



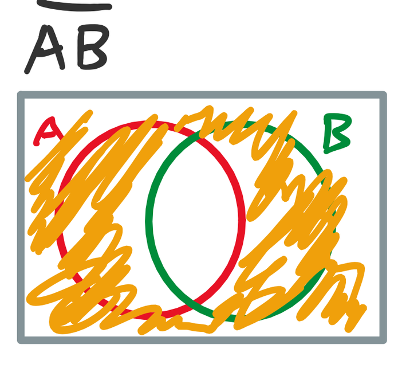
B



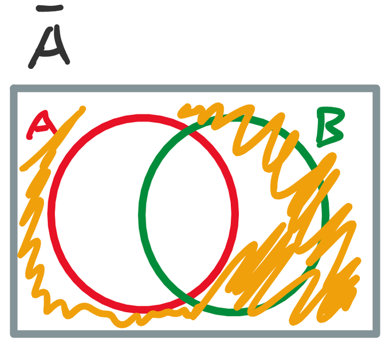
AB



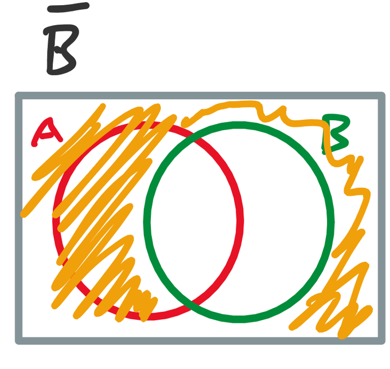
$\overline{AB}$

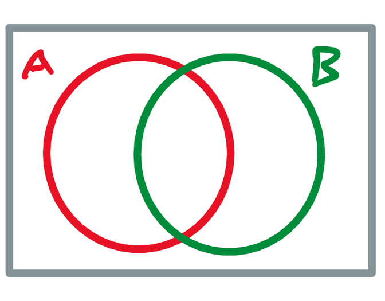


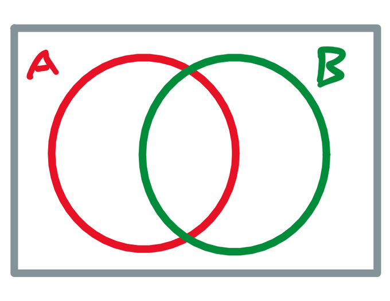
$\bar{A}$



$\bar{B}$

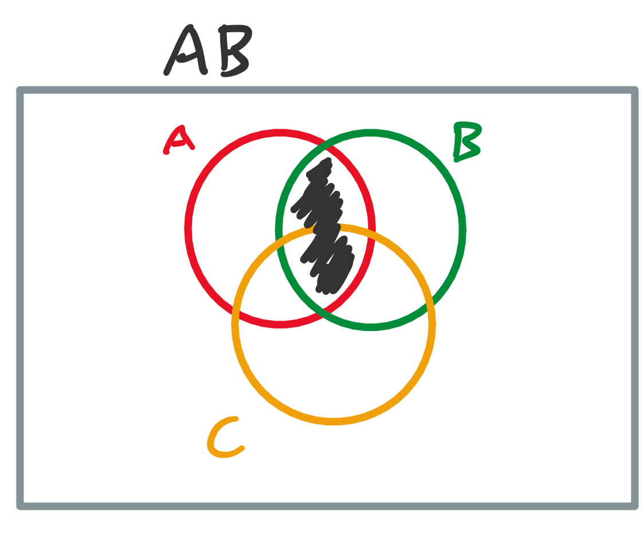




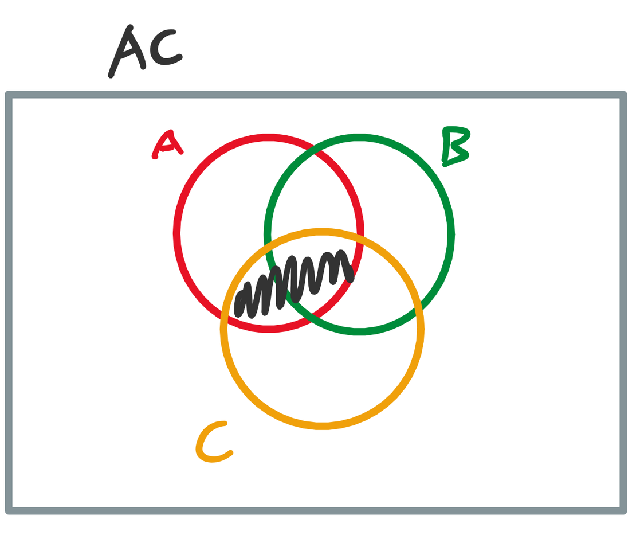


Distributive Property: $A(B+C) = AB + AC$

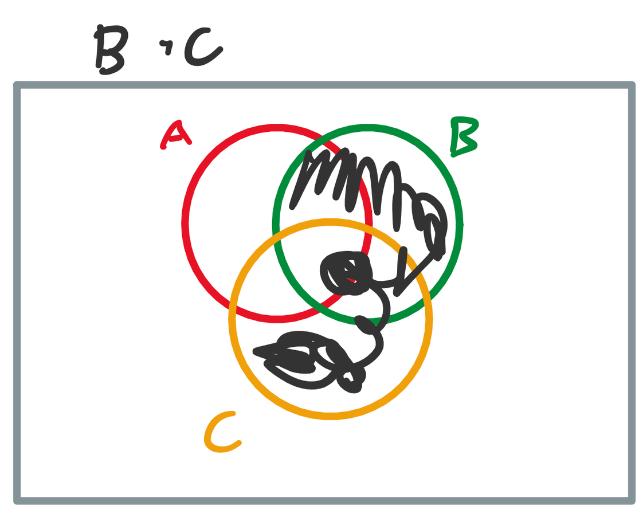
AB



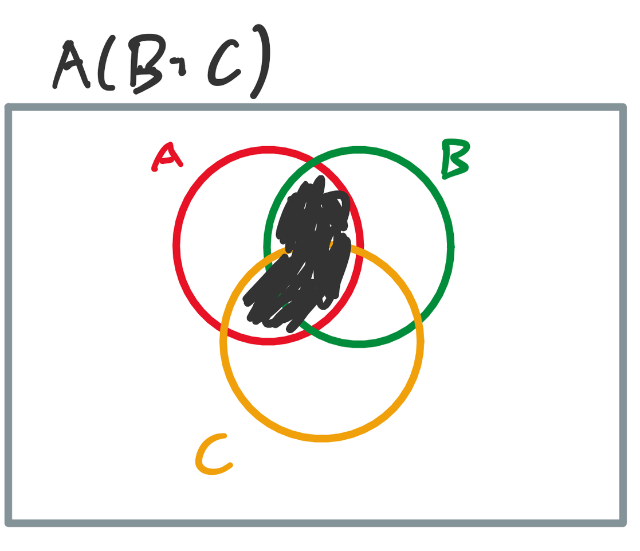
AC



B + C



A(B + C)



A	T	F
$f_1(A)$	T	T
$f_2(A)$	T	F
$f_3(A)$	F	T
$f_4(A)$	F	F

$f_1(A) = A + \bar{A}$

T + F is T

F + T is T

A	T	F
$A + \bar{A}$	T	T
$\bar{A}$	F	T
$A\bar{A}$	F	F

A, B	TT	TF	FT	FF
$f_1(A,B)$	T			
$f_2(A,B)$	F			
$f_3(A,B)$	F			
$f_4(A,B)$	F			

=	TT	TF	FT	FF
= AB	T	F	F	F
= $A\bar{B}$	F	T	F	F
= $\bar{A}B$	F	F	T	F
$\bar{A}\bar{B}$	F	F	F	T