Alternative to Venn Diagram

3 Variables :

n	Union - U			
C	AC	BC	C	Intersection- n
B	AB	B	X	
A	A	X	X	
	A_0	B_1	C_2	

Where

X =Don't Care, AB mean AnB, similarly AC=AnC and BC=BnC

Formula:

1. n(AUBUC) = [n(A)+n(B)+n(C)] - [n(AnB)+n(AnC)+n(BnC)] + [n(AnBnC)]

Example :

Given : A={1,2,3} B={2,3,4} C={3,4,5} n(AuBuC)=?

Set Elements	No. of Elements(n)
A = {1,2,3}	3
B = {2,3,4}	3
C = {3,4,5}	3
AnB= {2,3}	2
AnC= {3}	1
BnC= {3,4}	2
(AnBnC)= {4}	1
(AuBuC) = [3+3+3]-[2+1+2]+[1] = 9-5+1 (AuBuC) = {1,2,3,4,5}	5

How to Fill it :

n	n(AuBuC) = {1,2,3,4,5}			
C_2	AnC= {3}	BnC= {3,4}	C= {3,4,5}	n(AnBnC)= {4}
B_1	AnB= {2,3}	B = {2,3,4}	X	
A_0	A = {1,2,3}	X	X	
	A_0	B_1	C_2	

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