Q1. Simply the following using Boolean Algebra

i. $XY+XYZ+XYZ'+X'YZ=Y(X+Z)$

ii. $A'B'C'+A'BC'+A'BC=A'(C'+B)$

iii. $A'BC'D+A'BCD+ABD=BD$

iv. $A+A'B+AB' = A+B$

v. $AB+(AC)'+AB'C(AB+C)=1$

vi. $AB+AB'A+AB'C= A$

vii. $AB'C'+AB'C'D+AC'=AC'$

viii. $(A+B)(AC+C)(B+AC)' = 0$

ix. $AB+AC+ABC(AB+C)= AB+AC$

x. $C(B+C)(A+B+C)=C$

xi. $(A+B)(A+B')(A'+B)=AB$

xii. $A+AB+AB'C=A$