a)

$$AB + AC''D' + BC''D' = AB + CD'$$

$$ab + abc' = ab + bc'$$
$$a'b' + a'b' = a'b'$$

$$(AB + AC''D') + BC''D' =$$

$$AB + CD' + BC''D =$$

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$$(AB + B'CD') + CD' =$$

$$AB + CD' + CD' =$$

$$AB + CD' = AB + CD'$$

6)

$$A'B'C'D' + D = (A+B+C+D)'$$

$$(A+B+C+D)' + D \neq (A+B+C+D)' \quad \Bigg\} \quad FALSO$$

c)

$CFG + CD\overset{''}{E} + EFG + DFG = DFG + EFG + C(D+E)'$

$$CD\overset{'}{E}' + DFG = (CD\overset{''}{E}' + D) \cdot (CD\overset{''}{E}' + FG)$$

$$CD E D = CE' + D$$

$DFG + EFG + C(D+E)' =$

$CDE' + EFG + DFG =$

$(C\cancel{D}E' + D) \cdot (CDE' + FG) + EFG =$

$(CE' + D)(CDE' + FG) + EFG =$

$(CE'\cancel{CDE'} + CE'FG + DCDE' + DFG) + EFG =$

$(C\overset{'}{E}D + CE'FG + DCD'E' + DFG + EFG) =$

$C\overset{''}{E}D + CE'FG + DFG + EFG =$

$CE'FG + EFG + CE\overset{'}{D}' + DFG =$

$FG(CE' + E) + DFG + CE\overset{'}{D}' =$

$FG(C + E) + DFG + CE\overset{''}{D} =$

$CFG + EFG + CE\overset{''}{D} + DFG =$

$\boxed{CFG + CD\overset{'''}{E} + EFG + DFG}$

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