Properties of MVD

$R = R_1 \bowtie R_2$ is written as $X \rightarrow\rightarrow Y$ where X = $R_1 \cap R_2$ and $R_1 = X \cup Y$

- *Replication:* if $X \rightarrow Y$ then $X \rightarrow\rightarrow Y$
- *Coalescense*: If $W \subset Y$ and $Y \cap Z = \emptyset$ then $X \rightarrow\rightarrow Y$ and $Z \rightarrow W$ entails $X \rightarrow W$
- *Reflexivity:* $X \rightarrow\rightarrow X$
- *Augmentation:* $X \rightarrow\rightarrow Y$ entails $XZ \rightarrow\rightarrow YZ$
- *Additivity:* $X \rightarrow\rightarrow Y$ and $X \rightarrow\rightarrow Z$ entails $X \rightarrow\rightarrow YZ$
- *Projectivity:* $X \rightarrow\rightarrow Y$ and $X \rightarrow\rightarrow Z$ entails $X \rightarrow\rightarrow Y \cap Z$ *and* $X \rightarrow\rightarrow Y$-$Z$
- *Transitivity:* $X \rightarrow\rightarrow Y$ and $X \rightarrow\rightarrow Z$ entails $X \rightarrow\rightarrow$Z-Y
- *Pseudotransitivity:* $X \rightarrow\rightarrow Y$ and $YW \rightarrow\rightarrow Z$ entails $XW \rightarrow\rightarrow$Z-*(YW)*
- *Complementation:*$X \rightarrow\rightarrow Y$ entails $X \rightarrow\rightarrow R$-$Y$ where R is the set of attributes of the schema