1. Suppose we have a relation on attributes NFLCG with these FDs:

\[ N \rightarrow FL, NC \rightarrow G \]

(a) Suppose we decompose into relations \( NF, FLC \) and \( LCG \). Use the Chase Test to determine whether this is a lossless-join decomposition.

(b) Suppose we decompose into relations \( NF, NL \) and \( NCG \). Use the Chase Test to determine whether this is a lossless-join decomposition.

(c) Suppose we decompose into relations \( NFC \), and \( NLG \). Use the Chase Test to determine whether this is a lossless-join decomposition.
2. Suppose we have a relation on attributes $ABCDEF$ and it is to be decomposed into relations $ABCD$ and $DEF$.

(a) Invent a set of FDs that would make this a lossless-join decomposition.

(b) Invent a set of three FDs that would make this a lossy-join decomposition.

(c) If there were no FDs at all, is it possible that the decomposition is lossless?

**Important:** In practise, one never invents FDs! They are facts about the domain that either hold or don’t hold. So this question is completely unrealistic, but if you can solve it, you really understand the Chase Test.