1. Consider a table R(A, B, C, D), with the following given FDs: A→C, BC→D, CD→A, D→B. Identify all of the key(s) of R.

2. Consider the table R(A, B, C, D) in Question 1, with the following given FDs: A→C, BC→D, CD→A, D→B. Check if R is in BCNF. If R is not in BCNF, identify all of the FD(s) that violates the requirement of BCNF.

3. Consider the table R(A, B, C, D) in Question 1, with the following given FDs: A→C, BC→D, CD→A, D→B. Suppose that we apply the BCNF decomposition algorithm on R. Identify all of the tables that are among the final decomposition results.

4. Consider again the table R(A, B, C, D) in Question 1, with the following given FDs: A→C, BC→D, CD→A, D→B. Check if R is in 3NF. If R is not in 3NF, identify all of the FD(s) that violates the requirement of 3NF.

5. Consider again the table R(A, B, C, D) in Question 1, with the following given FDs: A→C, BC→D, CD→A, D→B. Apply the minimal basis algorithm on the given FDs. Select all of the FDs that are in the final minimal basis.

6. Consider a table R(A, B, C, D, E), with the following given FDs: AB→C, C→B, BC→D, CD→E. Identify all of the key(s) of R.

7. Consider again the table R(A, B, C, D, E) in Question 6, with the following given FDs: AB→C, C→B, BC→D, CD→E. Check if R is in BCNF. If R is not in BCNF, identify all of the FD(s) that violates the requirement of BCNF.

8. Consider again the table R(A, B, C, D, E) in Question 6, with the following given FDs: AB→C, C→B, BC→D, CD→E. Suppose that we apply the BCNF decomposition algorithm on R. Identify all of the tables that are among the final decomposition results.

9. Consider again the table R(A, B, C, D, E) in Question 6, with the following given FDs: AB→C, C→B, BC→D, CD→E. Check if R is in 3NF. If R is not in 3NF, identify all of the FD(s) that violates the requirement of 3NF.

10. Consider again the table R(A, B, C, D, E) in Question 6, with the following given FDs: AB→C, C→B, BC→D, CD→E. Apply the minimal basis algorithm on the given FDs. Select all of the FDs that are in the final minimal basis.