# 1. What would happen if you skipped the differential backup step?

If you skip the differential backup step, the database will only be restored up to the point of the full backup and the transaction log backup. However, the transaction log backup might not be applicable unless it is based on the full backup directly. Skipping the differential backup means you miss all the changes that occurred between the full backup and the time of the differential backup. This could result in incomplete data recovery and potential data loss.

# 2. What’s the difference between restoring a full vs. copy-only backup?

A full backup is part of the regular backup chain and sets the baseline for differential and transaction log backups. It affects the backup chain and is used for ongoing recovery strategies.  
A copy-only backup, on the other hand, is independent and does **not** affect the backup sequence. It is useful for creating ad hoc backups without disrupting the regular backup schedule. Copy-only backups are not used in restore sequences unless specifically intended, as they don’t serve as a base for differential or log backups.

PS: An **ad hoc backup** is a **one-time, unscheduled backup** that is performed **manually**, typically outside of the regular or automated backup schedule.

# 3. What happens if you use WITH RECOVERY in the middle of a restore chain?

Using **WITH RECOVERY** in the middle of a restore chain will bring the database online prematurely and make it inaccessible for any additional backups to be applied. This effectively ends the restore process, and any subsequent differential or transaction log backups cannot be restored. It may lead to an inconsistent or incomplete recovery. The **WITH RECOVERY** option should only be used in the **final step** of the restore sequence.

# 4. Which backup types are optional and which are mandatory for full recovery?

For full recovery, the **Full Backup** is **mandatory**.  
**Transaction Log Backups** are also **essential** if you want to recover the database to a specific point in time after the full backup.  
**Differential Backups** are **optional** but **highly recommended** as they speed up the recovery process by reducing the number of transaction logs that need to be applied.  
**Copy-Only Backups** are entirely **optional** and used for special purposes—they are not typically part of the regular recovery plan.