**Quiz 3/13**

**Q)**

**Say you need to build a Merkle tree to include 16 transactions**

**A)**

The total number of hashes needed to include 16 transactions in a Merkle tree is 31. The tree consists of multiple levels, with the first level consisting of 16 transactions. Each subsequent level has half the number of hashes as the previous level until we reach the root hash, which is a single hash.

\* Level 0 consists of 16 transactions

\* Level 1 consists of 8 hashes

\* Level 2 consists of 4 hashes

\* Level 3 consists of 2 hashes

\* Root Hash consists of 1 hash