Distinguish, differentiate, compare and explain what is the difference between Direct and Triaxial Shear Test. Comparison and Differences.

Difference between Direct and Triaxial Shear Test

1. Direct shear test is the simplest and the oldest test. Triaxial test is much more complicated.
2. It is difficult to control the drainage condition in direct shear test while the drainage conditions during the triaxial test can be controlled.
3. In direct shear, pore water pressure cannot be measured while in triaxial, pore water pressure can be measured.
4. In direct, the shear failure is predetermined while in triaxial, the shear failure is not predetermined.
5. In direct test, only total stresses are known. In triaxial shear, effective stress can also be determined.
6. Consolidation and drainage of sample is relatively fast in direct shear test. Consolidation and drainage of sample take a much longer time in triaxial shear test.
7. In direct shear, stress distribution on the failure plane is non-uniform. In triaxial shear test, stress distribution on the failure plane is uniform.