1. The dry density of a soil sample of sand with porosity of 0.387 is 1600 kg/m³. Find the void ratio of the soil and the specific gravity of the soil solids.

2. The following figure shows GSD curve for a given soil. Liquid and plastic limits for the fines are 30% and 20%, respectively. Classify the soil according to USCS.

3. A soil has the following values:
   - Gravel fraction = 30%
   - Sand fraction = 40%
   - Silt and clay = 30%
   - Liquid limit = 33%
   - Plasticity index = 12

Classify the soil by the unified classification system.