Self-assessment of understanding on pumped-storage hydropower

1. Explain the difference between a hydropower plant and a pumped-storage hydropower plant.
2. State and explain the three components of the head.
3. What is the unit of measurement of the head? How such a unit can be interpreted (think about the pressure head)?
4. What elements should one account for when considering the efficiency of a pumped-storage hydropower plant?
5. Recall a typical value of the round-trip efficiency of pumped-storage hydropower stations (an estimation from real measurements was given in another week of the course).
6. What is the hydraulic short-circuit, and what does it allow to do?
7. Calculate the energy storage capacity of a pumped-storage hydropower station with an elevation difference of 360 m among the two reservoirs and a capacity of 1'000 cubic meters each. Assume unitary overall efficiency of the system.