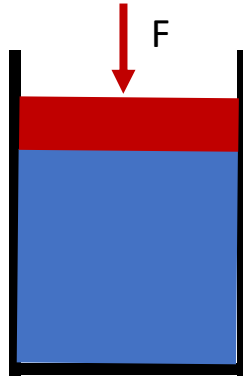


CLASSES 2

Task 1.2 In a water-filled tank, calculate the depth at which the total pressure is equal 150 kPa, if the atmospheric pressure equals 10.2 m hydrostatic pressure.

Task 1.3. Some force F presses on a piston with a diameter of 15 cm. Calculate the value of this force, knowing that the total pressure at the bottom of the 860 kg/m^3 oil filled cylinder is 250 kPa. The piston is 50 cm above the bottom of the cylinder. Disregard the weight of the piston in the calculations.



Task 1.4. Calculate the overpressure / underpressure value at the bottom of the 5 m deep water filled tank.

The difference between total pressure and atmospheric pressure is defined as piezometric pressure. A positive piezometric pressure value indicates overpressure, a negative value indicates underpressure.

Task 1.5. The cylindrical tank with a diameter of 0.2 m is filled with water to a depth of 5 m. A piston of unknown mass rests on the surface of the liquid. Calculate the mass of the piston at which the overpressure at the bottom of the tank will be equal to 10^6 Pa . Then calculate the force with which the piston should be lifted to create a underpressure of 10^5 Pa at the bottom of the tank.