Individual assignment No 1

1. Excess pressure in steam generator is p = (1+N)/10 bar while barometrical pressure is B_1 = (725+N) mm Hg. Define excess pressure in steam generator if barometric pressure would rise up to B_2 = (785+N) mm Hg and absolute pressure in boiler would be the same.
2. Volume of air vessel is (0.3+N/100) m^3, density of air in it is 2.86 kg/m^3. Define the mass of air into vessel.
3. Pressure in steam generator according to manometer is (13+N/5) MPa. Define absolute pressure in steam generator if atmospheric pressure is (1+N/100) atm.
4. Vacuumeter shows underpressure (N/50) kgf/cm^2. Define absolute pressure into the vessel if atmospheric pressure is 100 kPa?
5. Define the mass of gas with V=N gallon, if its density is 1,05 kg/m^3?
6. Manometer on steam generator shows P = (0.4+N/100) mPa. Define absolute pressure into steam generator if barometer shows (94+N) kPa.
7. Pressure into condenser of steam turbine is (5+N) kPa. Atmospheric air pressure is (100-N/10) kPa. Define underpressure into condenser.
8. The temperature of outside air is (20+N) °C. Define if the Freon HCFC-123 will boil at this temperature if its boiling point is 82.08 F.
9. Would N pd of water at 20 °C and atmospheric pressure boil if it is supplied with 50*N Btu of thermal energy?
10. The vehicle engine has (100+N) horse power. How much energy (in J) will it consume at maximal power with efficiency 50 % for 1 minute?

N here is number of your variant.