KSU – Chemical Engineering Department
ChE 212 (Thermodynamics) – TUT #3
Name: **ID:**   **SN:**

1. Determine the specific volume of superheated water vapor at 1.6 MPa and 225 °C based on:

    a. The ideal gas equation. R = 0.461 kPa.m^3/kg.K.

    b. The compressibility factor, Z = 0.935

        .

    c. The steam tables.

2. A 3.27-m^3 tank contains 100 kg of nitrogen at 225 K. Determine the pressure in the tank, using the ideal gas equation.

3. Complete the following table for H$_2$O:

T, °C	P, kPa	h$_f$, kJ/kg	h$_{fg}$, kJ/kg	h, kJ/kg	x	phase
140					0.56	
	200			2046		
350	800					