Textbook questions from 5th Edition.'

4–26 Complete this table for refrigerant-134a:

T, °C	P, kPa	v, m³/kg	Phase description
−4	320		
10		0.0065	
	850		Saturated vapor
90	600		

4–28 A 1.8-m³ rigid tank contains steam at 220°C. One third of the volume is in the liquid phase and the rest is in the vapor form. Determine (*a*) the pressure of the steam, (*b*) the quality of the saturated mixture, and (*c*) the density of the mixture.

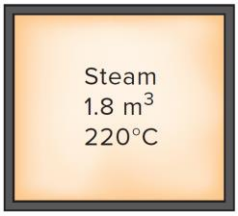

FIGURE P4–28

4–32 A 9-m³ container is filled with 300 kg of R-134a at 10°C. What is the specific enthalpy of the R-134a in the container?

#4

a) Water at 1MPa and a specific volume of 0.002m3/kg is contained in a piston cylinder and is defined as state 1. If a constant pressure process is performed until the temperature increases by 50C, what is the final state pressure and temperature and specific volume and quality (if it's a mixture). Denote this as state 2a.

b) If we start a new question, with the same initial conditions as above, except this time we perform a constant volume process until the temperature increases by 50 C, what is the final state pressure and temperature and specific volume and quality (if it's a mixture). Denote this as state 2b.

c) If we start again with the same initial conditions as (a) above, except this time we perform a constant temperature process until the pressure reaches the same as the final pressure in part (b), what is the final state pressure and temperature and specific volume and quality (if it's a mixture). Denote this as state 2c.

d) Plot the above process on a T-v and P-v diagram.