~~[illegible]~~

11.9 Above critical temperature a gas will not liquify no matter the pressure. The critical pressure is the minimum pressure needed to liquify a gas exactly at its critical temp.

11.10 Normal boiling point is temp at which vapor pressure of a liquid is 1 atm. The critical temp is the highest temp at which a liquid can coexist w/ its vapor. T_b & T_c are both higher in systems w/ strong intermolecular interactions.

11.11 (a) CH_3F because it is polar and has strong intermolecular interactions ($CH_3F : T_c = 317.8K$; $CH_4 : T_c = 190.53K$)

(b) CH_4 because it is more polarizable ($CH_4 : T_c = 190.53K$; $He : T_c = 5.19 K$)

(c) $C_{18}H_{38}$ because it is more polarizable ($C_{18}H_{38} : T_c = 746 K$; $C_3H_8 : T_c = 369 K$)

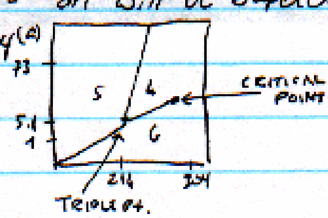
(d) Xe because it is more polarizable ($Xe : T_c = 289 K$; $Ne : T_c = 44 K$)

e) H_2O because it can form H-bonds ($H_2O : T_c = 647 K$; $CO : T_c = 133 K$)

11.12 because NH_3 forms H-bonds and PH_3 doesn't.

11.13 all will be supercritical.

11.14 (a)



(b) gas

(c) nope. And, the solid wouldn't float, it would sink.

11.15 an exact balance between opposing forces in reactions, maintained from within so that a system undergoes no net change.