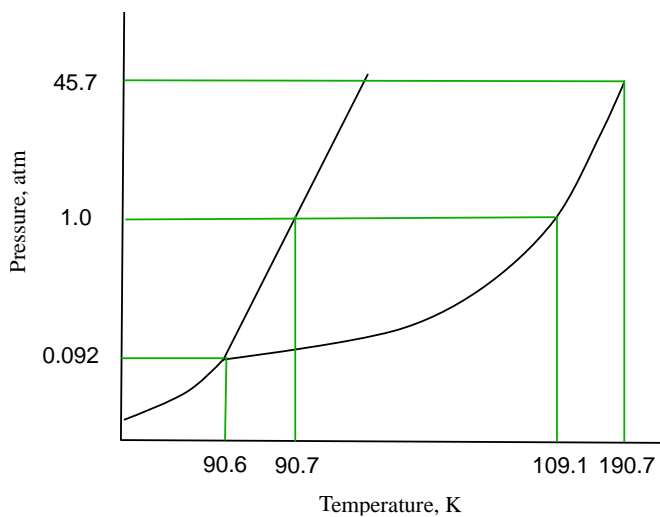


## Phase Diagrams

Consider the phase diagram below to answer the questions. The green lines are there to help determine points of temperature and pressure.



a) What is the normal boiling point of methane? What is its melting point at around 760 mmHg?

Normal BP = 109.1 K and MP = 90.7

b) Methane is a liquid, gas, or solid at 0.84 atm at 96 K.

It is a gas

c) What is the triple point pressure and temperature?

P = 0.092 atm T = 90.6 K

d) What is the critical temperature and pressure?

P = 45.7 atm T = 190.7 K

e) At what temperature and pressure is methane a supercritical fluid?

Above 47.5 atm and above 190.7 K

f) Is the melting point of methane at 1.0 atm above or below the triple point?

Above the triple point

g) At 0.092 atm, what are the phases of methane?

A solid and a gas