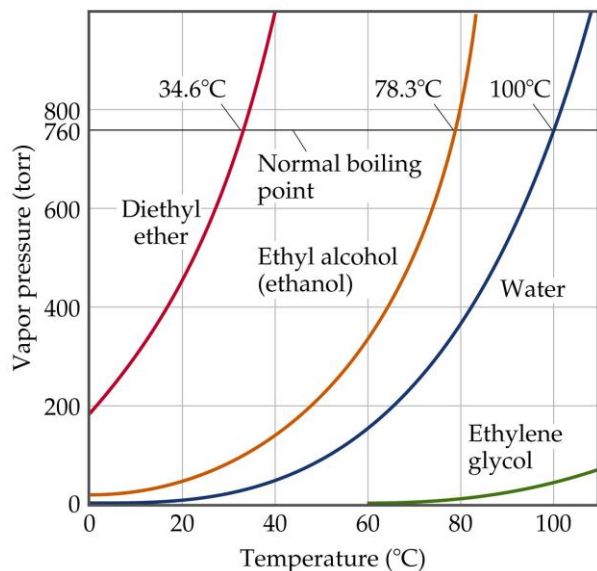
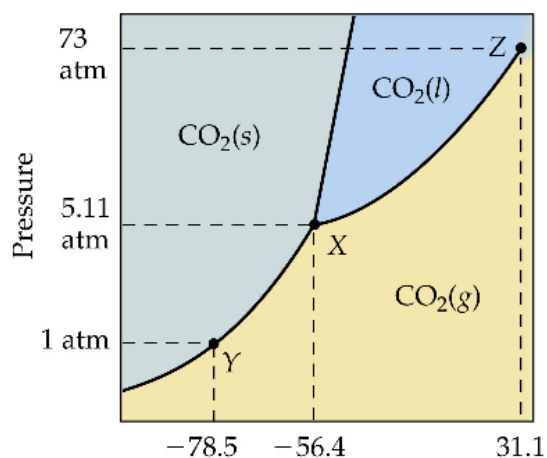


## AP Chemistry – Liquids and Solids – 26

Name \_\_\_\_\_ Per \_\_\_\_\_



1. Use the vapor pressure curve to estimate the external pressure under which ethyl alcohol will boil at 70°C.



2. Use the phase change diagram to describe the phase changes, and the temperatures at which they occur, when CO<sub>2</sub> is heated from -80°C to -20°C at

(a) a constant pressure of 3 atm

(b) a constant pressure of 6 atm

3. What is the significance of the triple point in a phase diagram?
4. Could you measure the triple point of water by measuring the temperature in a vessel in which water vapor, liquid water and ice are in equilibrium under one atmosphere of air? Explain.
5. (a) Draw a unit cell diagram of Perovskite, a compound that has a Calcium atom at all eight corners of its unit cell, an Oxygen atom in the center of each face of its unit cell, and a Titanium atom in the center of its unit cell. (b) What type of unit cell structure does this compound exhibit? (c) What is the chemical formula of the compound?
6. Indicate the type of crystal (molecular, metallic, covalent-network, or ionic) each of the following would form upon solidification:
- (a)  $\text{CaCO}_3$
  - (b) Pt
  - (c)  $\text{ZrO}_2$  (melting point  $2677^\circ\text{C}$ )
  - (d) Kr
  - (e) benzene
  - (f)  $\text{I}_2$
7. You are given a white substance that sublimates at  $3000^\circ\text{C}$ . The solid is a nonconductor of electricity and is insoluble in water. Which type of solid might this substance be? Explain.