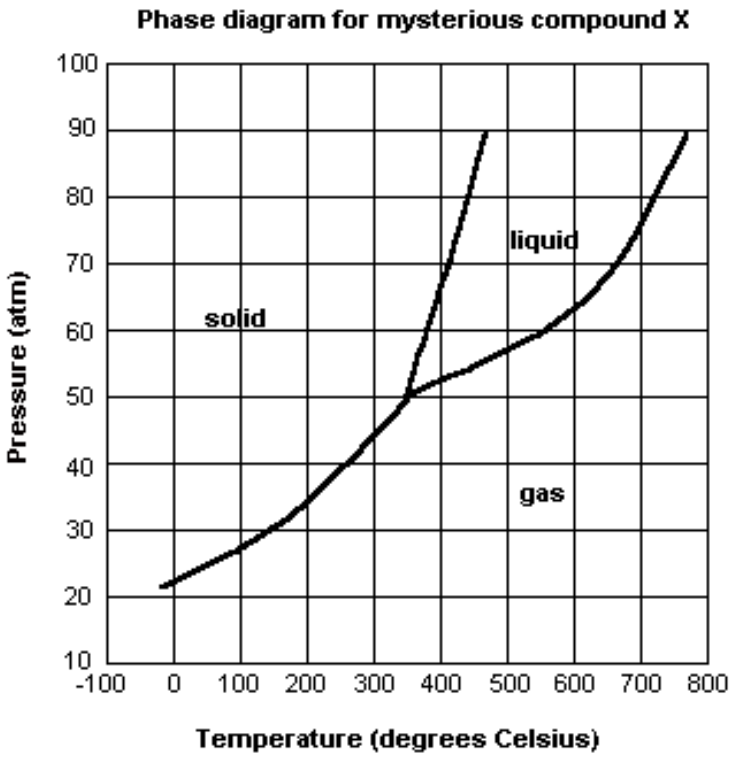
Extra Practice: Phase Diagrams #2

Name: _____



For each of the questions below, refer to the phase diagram shown above for mysterious compound, X.

1) If you were to have a bottle containing compound X in your closet, what phase would it most likely be in?

_____

2) At what temperature and pressure will all three phases coexist?

_____

3) If I have a bottle of compound X at a pressure of 45 atm and temperature of 100^0 C, what will happen if I raise the temperature to 400^0 C? (Specify phase change.)

_____

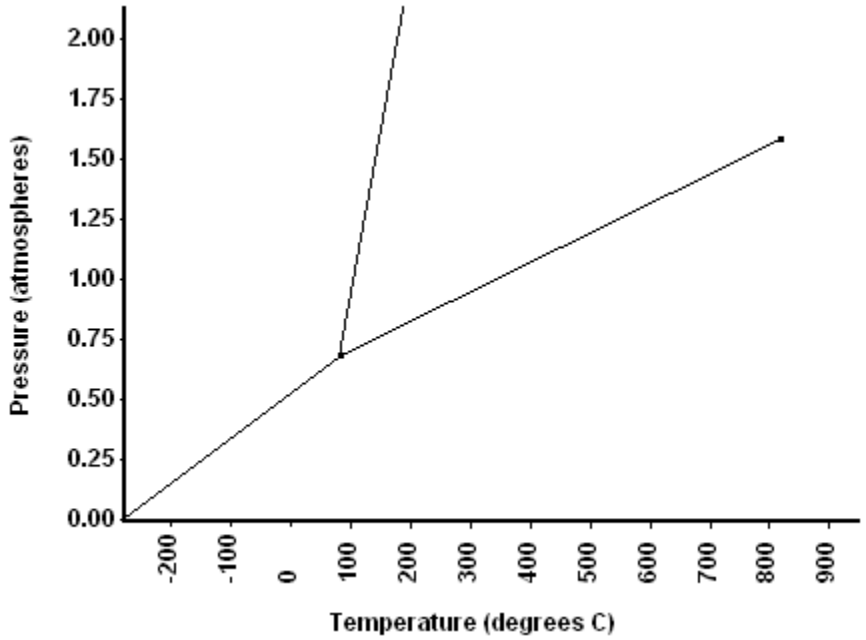
4) If compound X is nontoxic, would you be able to drink it in the liquid form?

_____

5) If I have a bottle of compound X at a pressure of 70 atm and temperature of 750^0 C, what will happen if I lower the temperature to 600^0 C? (Specify phase change.)

_____

Refer to the phase diagram below when answering the following questions.



6) What is the normal freezing point of this substance? _____

7) What is the normal boiling point of this substance? _____

8) What is the normal melting point of this substance? _____

9) If I had a quantity of this substance at a pressure of 1.25 atm and a temperature of 300^0 C and lowered the pressure to 0.25 atm, what phase transition(s) would occur?

_____

10) At what temperature do the gas and liquid phases become indistinguishable from each other?

_____

11) If I had a quantity of this substance at a pressure of 0.75 atm and a temperature of -100^0 C, what phase change(s) would occur if I increased the temperature to 600^0 C? At what temperature(s) would they occur?

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